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THE CHEMIST & DRUGGIST SUPPLEMENT.

SATURDAY, SEPTEMBER 4, 1897.

Businesses for Disposal
Businesses Wanted
Premises to Let
Auction Sales

ALSO EXCHANGE COLUMN.

For Bargains see last page of this Supplement.

Partnerships
Situations Vacant
Situations Wanted
Miscellaneous

Copy of this Supplement is inserted in every number issued of "The Chemist and Druggist."

CHEMISTS' TRANSFERS.

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5.—**MIDLANDS.**—Market town; Retail and Prescribing trade; returns £650, can do £1,000; good house and garden; large well-fitted shop; small goodwill and valuation of stock and fixtures.

6.—**EAST COAST (Seaside Resort).**—Old-established Retail, Dispensing, and Prescribing Business; returns over £700; net profit £200; good house; no goodwill; valuation of stock and fixtures only required.

7.—**SOUTH COAST.**—Light Retail and Prescribing Business; returns £700, has done £1,400; good house; long lease; price £325, or valuation of stock and fixtures; fortune to good Prescriber.

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4.—**LONDON SUBURB.**—Retail and Dispensing; nice local; returns about £400; price £200, or valuation; nominal rent.

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The Council does not bind itself to accept the lowest or any tender, and it will not accept the tender of any person or firm who shall on any previous occasion have withdrawn a tender after the same has been opened unless the reasons for the withdrawal were satisfactory to the Council.

Spring Gardens, S.W.,
1st September, 1897.

O. J. STEWART,
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LEIS.—In a pleasant and healthy suburb, compact Business for sale; price £160; returns under management £7 a week, could be greatly increased by qualified man; rent £28. Apply, Hirst, Brocke & Hirst Limited, Leeds.

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LONDON, W.—For Sale, in consequence of the death of the proprietor, a first-class old-established Business, Retail and Dispensing; capable of great extension; good house, residential locality, low rent, long lease. Address "Isinglass" (242/25), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

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TO be Sold, immediately, good General Retail, Dispensing, and Prescribing Business in main thoroughfare of large town; satisfactory reasons for disposal; worth of stock and fixtures; no agents. Apply, 244/18, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

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RETAIL.

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ALDERSHOT.—Wanted, a smart Junior for a good-class Cash business; capable of taking occasional charge, and accustomed to Dispensing and putting up stock. Apply, giving full particulars, age, height, salary required, references, and enclose carte (which will be returned), to Allen & Lloyd's Cash Chemists' Stores, Aldershot.

BATH.—Indoor, energetic, gentlemanly Assistant, good Dispenser, obliging counterman, about 25 to 30 years of age; close at work on Thursdays, short hours. Apply, Thomas, Chemist, Bath, stating age, height, qualification, salary required, &c.; send photo.

SITUATIONS OPEN—*cont.*

RETAIL—continued.

BRENTFORD.—Assistant required; part-time engagement; suit Student for Minor; outdoors; no Sunday duty; must be reliable and trustworthy. State full particulars, with references, Hawthorne, Brentford, W.

BRIGG.—Wanted, immediately, Improver; outdoors; rooms easily secured; state salary required. also age, height, experience, and references; country market town. Blankley, Chemist, Market Place, Brigg.

BRIGHTON.—Wanted, at once, a qualified Assistant (indoors) for good-class Retail and Dispensing business; first-class references and good experience necessary. Apply, stating age, salary required, &c., and enclose carte, to Parris & Greening, West Brighton.

BRIGHTON.—Indoor Assistant, with Minor qualification, about September 21st, accustomed to good-class trade, to Dispense and assist at counter; Junior kept. Apply, stating age, height, salary and references. also enclose photo (if convenient). K. Pears & Son, Pharmaceutical Chemists, 16 Western Road, Brunswick Square, Brighton.

CARDIFF.—Smart Assistant wanted: able to Dispense, good Counter-man, accustomed to Photography. Send photo, with full particulars and salary required (outdoors), Duck's Drug Stores, Cardiff.

CARDIFF.—An Assistant; about 22; accustomed to good-class Dispensing and Retail business; indoors. Apply, stating full particulars, enclosing photo (to be returned), and salary required, to D. Harris, 100 Queen Street, Cardiff.

DUDLEY.—Immediately, good Junior, about 20, accustomed to Mixed trade preferred; moderate hours, no Sunday duty. Full particulars, age, height, c.d.v., &c., to George Raybould, Chemist, Dudley, Worcestershire.

FLEETWOOD.—Qualified Assistant, with view to Managership; if married can live on premises. Apply, stating usual particulars, enclose photo (to be returned), to C. R. Gauegar, 6 West Street, Fleetwood.

HULL.—Wanted, Junior, indoors; good appearance, trustworthy. Apply, stating age, salary required, references, &c. Knowles, Chemist, Holderness Road, Hull.

LANCASTER.—Junior; outdoors; accustomed to Country trade; weekly half-holiday; no Sunday duty. State all particulars, Arkle, 13 Penny Street, Lancaster.

LEDGBURY.—Wanted, Junior in a Mixed country business; must be able to Dispense and willing to make himself generally useful; in return can offer him a comfortable home. Send photo, if possible (which will be returned), V. W. Meacham, Ledbury.

LEEDS.—Wanted, a smart Junior Assistant; tall. State full particulars, salary, &c., G. Crawshaw, Pharmaceutical Chemist, Hyde Park, Leeds.

LICHFIELD.—Smart Junior for a Mixed business; outdoors; no Sunday duty; must be well recommended. State age, height, salary required, and full particulars, enclose photo (which will be returned), J. J. Perkins, Family Chemist, Lichfield.

LIVERPOOL.—Qualified Assistant, to act as Manager; must be a good all-round man and have good references; also a Part-time Junior Assistant. Apply, with full particulars (personal application preferred), to A. Shaw, 43 Green Lane, Stoneycroft, Liverpool.

LLANDUDNO.—A qualified Assistant; one who has been accustomed to a good-class Counter Trade and Dispensing. Apply, stating usual particulars, enclose photo (to be returned), to J. Burton, Chemist, Llandudno.

LONDON.—Wanted, by September 1, a qualified single gentleman, aged about 24 years, for small Retail; outdoors; good Counterman; energetic; character must bear the strictest investigation. Apply, by letter, or personally daily at 4 P.M., to C. S. A., 19 Elgin Avenue, W.

LONDON, E.—Wanted, at the beginning of October, qualified Christian Dispenser (male) for Medical Mission, East London; part-time; required to teach some Dispensing. Apply, by letter, stating qualifications and giving references, to Dr. Harford-Battersby, 33 Hamfrith Road, Stratford, E.

LONDON, N.W.—Junior Assistant (qualified preferred) for first-class business. Apply personally after 4 P.M., or send photo, with salary and references, Cosway & Rutter, 109 Kilburn High Road, N.W.

LONDON, N.W.—Immediately, Assistant wanted, who has had good experience in Dispensing and Retail, and is able to take charge occasionally; good references. Apply, Parker & Co., 1 King's College Road, Adelaide Road, South Hampstead.

LONDON, S.E.—Improver or Junior Assistant wanted immediately for Cash business; good hours, and live outdoors. Apply, with full particulars, to Blackie, 43 Parker's Row, Bermondsey, S.E.

LONDON, S.W.—Qualified Assistant, with good Dispensing experience, required by Newton Spyer, 13 Gleishow Terrace, South Kensington, S.W.

LONDON, S.W.—Outdoors, a smart, energetic, pushing Assistant of good address as Junior Counterman and Stockkeeper, but must be well up all round, and thoroughly recommended. Apply, stating full particulars, salary required, &c., to Cross, 23 Brompton Road, London, S.W. If personally call before 1 P.M.

LONDON, S.W.—Manager for Branch, to live on premises; age about 30; qualified; good references. In reply give as full particulars as possible, Bunker, 135 Great Dover Street, S.E.

LONDON, S.W.—Wanted, Dispenser; abstainer; outdoors; daily 11 to 2.30, and 5.30 to 9.30, Sundays 2 to 3; salary 15s. 6d. weekly. "Dr 101 Northcote Road, Clapham Junction, London, S.W.

LONDON, S.W.—Wanted, two qualified Assistants; one indoors, one outdoors; accustomed to Chemist's up-to-date Store. State full particulars to G. F. H. Bartlett, 143 High Street, Battersea, S.W. Also Apprentice.

LONDON, N.—On September 25th, a qualified Assistant for Branch aged 25 to 30. Also an experienced Assistant, competent to take charge; half-holiday weekly; very little Sunday duty. Apply, stating full particulars of qualification, experience, age, salary (indoors), &c., "Chemist 52 Bishop's Road, Victoria Park, N.E.

LONDON, W.—Immediately, Junior Assistant, with knowledge of Photography. Full particulars and salary required, to C. Woolton, Chemist, 28 Kilburn Lane.

LONDON, W.—Wanted, qualified Assistant; aged about 23 or 24; experienced, and a good counterman. Apply, Style, 48 Regent Street, London, W.

LONDON, S.E.—Junior or Improver; smart and used to quick Cash trade. State salary and references, photo if possible, 45 Rye Lane, Peckham, S.E.

LONDON, N.E.—Reliable Manager, capable of working up small business in N.E. London; good Prescriber, Extractor, and Counterman permanency to suitable man. Apply personally, or, if by letter, enclose photograph to Wel's Wood, 8 Albion Parade, Albion Road, Stoke Newington, N.

LONDON.—Young qualified, energetic man wanted; good general experience. Apply, 98 Gray's Inn Road, W.C.

LONDON.—Assistant wanted, immediately; a pushing, active man not under 25, capable of Extracting Teeth preferred. State age, height, reference and how long, salary (if a carte forward will return). Apply personally, Morris, Chemist, Bowes Park, London, N. (close to Northern Railway Station).

LONDON, S.W.—Wanted, immediately, a competent qualified Assistant (outdoors), about 25 to 30, for high-class Store business. Apply W. H. Bate, 44 Harrington Road, South Kensington S.W.

MANCHESTER.—Wanted, an Assistant; outdoors; aged about 20; General business. State experience, salary, and if qualified, O. Butcher, 329 Chapel Street, Salford.

MELKSHAM.—Wanted, on November 1, smart Junior, of good address (indoors); one with a knowledge of Photo trade preferred. Excellent opportunity of acquiring a thorough knowledge of Mechanical Dentistry. Apply, with full particulars, stating age and salary required, and enclosing photo (to be returned), to Jas. E. Bush, The Pharmacy, Melksham.

MIDLANDS.—Wanted, an Assistant first week in October, not under 24, for a good-class Mixed Retail and Dispensing business; comfortable home; must be quick, accurate, neat and obliging to customers; good salesman and of good appearance and address; indoors preferred; weekly half-holiday, no Sunday duty. Apply, with full particulars as to salary, references, experience, age, height, &c., with photo, if possible, to "Alpha W. Edwards & Son, 157 Queen Victoria Street, London.

NEWCASTLE-ON-TYNE.—Smart, up-to-date Major man wanted by October 1, as Assistant in the North of England School of Pharmacy; good hours and liberal salary; early opportunity of acquiring substantial interest in the school could be given to capable and energetic man. Apply, with references and photo (which will be returned), with salary expected, age, experience, where studied, and date of passing Major to The Principal, 55 Northumberland Street, Newcastle-on-Tyne.

NEWPORT (MON.).—Wanted, two competent Assistants (Indoors) with knowledge of Photography. Enclose photo and usual particulars, to Phillips & Son, Pharmaceutical Chemists, Newport (Mon.).

NORFOLK.—Wanted, qualified Assistant, capable of taking entire charge if required. Apply, giving full particulars, to H., 47 Aco Lane, S.W.

NORTH OF ENGLAND.—Required, at once, Manager (qualified) for large Mixed business on Stores principle; must be energetic, of good address, smart salesman, and thoroughly experienced storeman; good salary given to suitable man. State age, height, experience, salary required with copy two recent testimonials, to 240, 9, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

NORTH WALES.—Junior, about 20; indoors; abstainer preferred. Protestant; one accustomed to good-class counter trade and Dispensing. Full particulars and, if possible, photo, to Adamson, Colwyn Bay.

NORTH-WEST OF ENGLAND.—Managing Assistant wanted for large Retail Drug Stores; must be active and good salesman. State age, salary, experience, and full particulars, to A163, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

PORTH, GLAM.—A competent Assistant to take charge of a Branch business; half-holiday weekly; no Sunday duty. Apply, with full particulars as to age, experience, salary required, and when disengaged, T. Davies, Pharmacist, Porth, Glam.

RIPON (Yorks).—Indoor Assistant; must be energetic, able to Dispense, and accustomed to a Mixed Country trade; easy hours; state full particulars, references, salary, age, height, &c., with photo (to be returned). Apply, by letter, to T. Judson & Son, 18 Market Place, Ripon, Yorks.

RETAIL—continued.

CORN.—Wanted, a qualified Assistant, at once; outdoors; state age and wages required; a permanency if suitable. Apply, Exors. of A. Buck, Dispensing Chemist, 77 Bridge Street, Runcorn.

RYE, I.W.—An Assistant, about 25 years of age, accustomed to first-class Retail and Dispensing business. State age, height, salary, and refer to Tenison Smith, Ryde, I.W.

SOUTHSEA.—An Assistant about 22 or 23. Apply, stating age, height, experience, and salary, with photo (to be returned), to J. G. Sanger, Dispensing Chemist, Southsea.

STOUD (GLOS.).—Assistant, age about 22 accustomed to Light Retail and Dispensing; indoors; must be quick and accurate Discounter and neat writer; hours moderate; please state age, height, and required, also last references, S. J. Cooley, Chemist, Stroud.

TOWYN.—Wanted, a Welsh-speaking Assistant to Manage a Branch; must be well recommended. Address particulars to R. J. Roberts, Towyn, Merioneth.

TRIMMERE.—Wanted, an Improver; state age, height, salary, experience, references; comfortable home; good opportunity for improvement. Address, Lumby 12 Church Road, Trimmer.

WISBECH.—Wanted, immediately, an Improver or Junior, accustomed to Mixed Country business. Apply, stating age, height, experience, salary required, and enclosing c.d.v., to Major Hill, Cash Chemist, Wisbech.

WOLWICH, S.E.—Wanted, at once, qualified Manager or qualified assistant able to take charge in Principal's absence. Apply, stating height, salary required, and enclosing photo, to Goldthorpe & Cook, Chemists, Herbert Road, Plumstead, S.E.

WORCESTER.—Outdoor Assistant for the Retail Counter. Apply, with photo, stating age, height, and experience, to E. J. Kitson, The O. Drug Stores, Worcester.

ASSISTANT, to take first position at second counter; qualified; salary (outdoor) £2 a week. Apply, stating age, height, references, and enclosing photo, Wand, Cash Chemist, Haymarket, Leicester.

EXPERIENCED Assistant for good-class Country business; neat writing; references; no Sunday duty; Thursday evening free. Stating height, salary required (outdoors) and enclosing photo, to "Beta," c/o Messrs. Newbery, 1 King Edward Street, E.C. Letters not answered in three days may be considered declined.

FRUIT-COUNTER hand required, for good class business; must be good salesman. Reply, with terms expected, references, to H. Conynan, 32 Upper Baggot Street, Dublin.

IMMEDIATELY, qualified Assistant, about 24; also one about 26, found of September; must be competent men, accustomed to good-class business; indoors. Apply, "Statim," Messrs. Hearon, Squire & Francis, 38 Southwark Street, S.E.

JUNIOR wanted, for Mixed Drug Store in the Midlands; unqualified; good business tact required; character must bear every investigation; abstain preferred. State salary and full particulars, with photo, to 240/7, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

JUNIOR Assistant, immediately, indoors, aged about 20; quick and accurate; none but good Countermen and thoroughly trustworthy need apply. State salary required, references, age, height, enclosing c.d.v. (to be returned), W. Jacobs, Chemist, Guilford.

MANAGER.—An energetic and reliable Assistant, of gentlemanly manners, to manage a business in a country town; must be well recommended; a single gentleman desiring a permanency preferred; comfortable indoor berth. Apply, stating age, height, experience, salary required when disengaged, and enclosing photo (to be returned) to "Senega" (244/7) Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

QUALIFIED Assistant required, with view to Partnership, in an established, good-class country business; very suitable for a married man with family, who is accustomed to an Agricultural trade. Apply, "Z," (225), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C. Applications not answered in 7 days may be considered declined.

SHORTLY, Manager and Assistant (qualified preferred), for good-class Store trade; outdoors; must be good Counterman, quick, and have thorough general knowledge; Dentistry and Photography desirable. Apply, with photo, references, salary required, and full particulars, to "South East" (243/2), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

WANTED, an experienced Junior, 21 or 22, well up in first-class work. "Guest" (242/35), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

WANTED, qualified Assistant-Manager, gentlemanly, energetic, good Counterman, for medium-class Retail, just converted into limited knowledge of Photo Sundries trade desirable, but not essential; preferred; please state age, experience, salary required (indoors), and enclosing photo; hours 8.30 to 9, Saturdays 10 p.m.; half day to one who has managed single-handed a branch business this a most suitable berth. Apply, "Manager," 1 Rock Villa, Rowington.

WANTED, a competent man to run a Cash Chemist's; qualified or unqualified; must have good references. Reply, with terms, which stated in strict confidence, to J. Jones, 323 Holloway Road, N.

WHOLESALE.

LONDON.—Wanted, a good Counterman, fully qualified; also a quick trustworthy Packman. Apply by letter, Galen Works, Wilson St., S.E.

AN experienced Laboratory man, qualified and of undoubted references. Apply, Magor Limited, 43 Bull Street, Birmingham.

CHEMIST, to fill permanent position in a large manufacturing house; a steady and reliable man wanted who may be depended upon for accuracy and carefulness. Previous experience in the Wholesale not essential. Apply, with full particulars of age, experience, salary, and qualifications, to C. T. F., c/o T. Dixon's Advertising Offices, 16 Great Marlborough Street, W.

DRUGGISTS' SUNDRIES.—Wanted, Residential Representative for Sheffield. State age and experience to 244/5, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

EASTERN COUNTIES.—Wanted, a Representative for Sundry house; state ground previously covered. 205/44, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

LADY CHEMIST.—A vacancy occurs in a large manufacturing firm for a qualified lady of good experience; preference given to one seeking a permanency. Applications, giving full particulars of age, salary, experience and qualifications, to be addressed to "Alkaloid," c/o T. Dixon's Advertising Offices, 16 Great Marlborough Street, W.

REPRESENTATIVE required by a Provincial Drug House of good standing. Apply, with full particulars of ground covered, experience, and salary required, to "Phenol" (201/31), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C. All replies will be treated in strict confidence.

SMART Traveller wanted, to push Veterinary and Human Embrocation trade in the Midlands and elsewhere; must be experienced. Apply, by letter, stating qualifications, age, salary required. Aston Chemical Co., Birmingham.

WANTED, a Lady Shorthand and Typewriter; one used to the Drug trade preferred; good salary given to a smart hand. Apply, by letter, "S" (205/59), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

WANTED, a competent well-trained Pharmacist, with first-class qualifications and good organising experience and abilities, to take charge of a department in a large manufacturing firm. Write full particulars of age, qualifications, experience, and salary required, to "Morphine," c/o T. Dixon's Advertising Offices, 16 Great Marlborough Street, W.

WANTED, a Gentleman to represent a firm of Manufacturing Chemists to Medical Men and Chemists in London; gentlemen with good knowledge of the business, active and energetic, will find this a good opening; permanency to suitable man; fixed salary, no commission. Apply, in first instance, to "Morphia" (238/15), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

WANTED, a third Wet Counter hand. Apply, stating experience and salary required, to R. Sumner & Co., Wholesale Druggists, 50A Lord Street, Liverpool.

TRAVELLERS (Great Britain generally).—Arrangements are being made to pay few good men liberal commission to push as a side line well-known and phenomenally successful Speciality; applicants for particulars should state present line and district covered; this is a good thing and worth looking into; middlemen need not write. Replies strictly confidential, to "Speciality," Box 134, Sell's Offices, 167 Fleet Street, E.C.

APPRENTICESHIPS.

RETAIL.

APPRENTICE wanted for a brisk Retail business; comfortable home; moderate premium required. Address, S. G. Baker, 16 Church Street, Greenwich, S.E.

SITUATIONS WANTED

1s. for 12 words or less; 6d. for every 6 words beyond.

RETAIL.

ASSISTANT; 22; 5ft. 11 in. H. Wing, 452 Oxford Street, W.

QUALIFIED; good experience; aged 25. "Ireland," 199 Mere Road, Leicester.

JUNIOR; 20; London preferred; time for study. Harratt, Ilstock, Leicester.

LONDON; part-time; vicinity of Wills's preferred. W. Barrett, Cornwood, Ivybridge.

JUNIOR; 21; 6 years' experience; London only. F. Buckingham, Harleston, Norfolk.

DISPENSER to Doctor; aged 26; good references. A. Z., 26 Mosslea Road, Penge, S.E.

PART-TIME; qualified; first-class experience. "Salol," 67 Lamb's Conduit Street, W.O.

AS Manager; qualified; amateur Photographer; aged 34. "Chemist," Grove House, Llandilo.

JUNIOR; 21; 4 years' 4 months' experience; disengaged. D. Lewis, Giffach, Llandeibie, Carm.

SITUATIONS WANTED—cont.

RETAIL—continued.

TEMPORARY, Partner, or view to succession; 35; good experience. H., 83 North Street, Leeds.

ASSISTANT; outdoors; 14 years' good varied experience. "Chemicus," 37 The Square, Petersfield.

LOCUM or permanency; qualified; married. Pollard, 19 Minford Gardens, West Kensington.

QUALIFIED: first-class experience; 23. Particulars to "Chemicus," 80 Middle Street, Brighton.

QUALIFIED: 24; experienced; disengaged shortly. "Chemist," 50b King's Road, Brighton.

PERMANENT or temporary. Heald, Pharmaceutical Chemist, Exam., Swineshead, Boston.

ASSISTANT; 24; London; time for study preferred. Roberts, 1 Claremont Road, Surbiton.

PART-TIME; London; indoors; good references; 23; disengaged. Lenton, Clifton, Biggleswade.

PART-TIME; Dispensing; London; beginning October. White, 21 High Street, Sandown, I.W.

JUNIOR; 21; tall; disengaged September 14; good references. Blaydes, Market Place, Sleaford.

LOCUM, Manager, or outdoor Senior; qualified; London and country experience. Carin, Heckington.

LOCUM-TENENS for September; qualified; aged 22. H. J. Smith, The Chantry, Cartersgate, Grimsby.

ASSISTANT; 22 years; good experience; outdoors preferred. "Rhei," c/o Mrs. Burston, Tarporely, Cheshire.

MANAGER; qualified; aged 23; tall; good experience; disengaged. F. Smith, North Street, Bourne, Lincs.

LONDON: part-time with Chemist or Surgeon; aged 23; abstainer; outdoors preferred. B., Appledore, Devon.

COMPETENT Junior; 22; unqualified; Extractor; London preferred. "Alain," 113 Castle Road, Carliff.

PART-TIME situation required, in London. 241/9, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

LOCUM-TENENS; qualified; aged 30; disengaged from September 4 to 12. "Chemist," 9 Eresby Road, Kiburn, N.W.

AS Assistant or Manager; aged 30; Minor qualifications. 245/23, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

ASSISTANT; 23; 7 years' varied experience; references; out or in; disengaged. "Radix," Brook House, Loose, near Maidstone.

MANAGER; disengaged; qualified; good Prescriber and Extractor. Registered Dentist. "Bonus," 4 Harbour Street, Folkestone.

AS Improver in Mechanical Dentistry; also would give services in Retail Chemist's shop duties. Acacia Leigh, Cobham, Surrey.

ASSISTANT; 27; 5 ft. 8½ in.; first-class and all-round experience; competent Extractor. "Chemicus," 23 High Street, Abingdon.

EVENINGS, after 5, by a competent trustworthy Assistant. 245/13, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

PART-TIME or Evenings; disengaged; good references; Stock or Counter or Dispensing. "Antipyrine," 82 Crowdale Road, N.W.

MANAGER (Branch) or Assistant; Extractor; 45; qualified; married. "Chemicus," 43 Leamington Terrace, Tong Road, Leeds.

CHEMIST'S son, 5 years' Retail experience, requires berth in Wholesale house, any branch; aged 21; abstainer. Bolton, Southgate, N.

ASSISTANT; outdoors; 25; Apothecaries; London and country experience; abstainer. Evans, Bristol House, New Quay, Cardigan-shire.

IMPROVER; abstainer; 3 years' experience; highest references; nominal salary. "Chemicus," c/o Mrs. S. Goddard, Eyke, Woodbridge, Suffolk.

MANAGER; West-end and provincial experience; married; Minor and Hall qualifications; highest references. S. F., 17 Larch Street, Southampton.

QUALIFIED; 25; part-time; outdoors; good London experience. "Aristol" (243/6), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

JUNIOR; 19; height 5 ft. 9 in.; four years' experience; disengaged September 20th; Eastern counties preferred. Auston, Harwich Road, Colchester.

DENTISTS (Mechanical).—Assistant, aged 25, 7 years' experience, disengaged, requires situation. T. M., 18 Attwood Terrace, Wolsingham, Durham.

FRENCH Attendant (21) wants situation; speaks English. 46 Ebury Street, S.W.

MANAGER (temporary); 45; disengaged 9th. Baker, 65 L Street, Kentish Town, N.W.

RIVIERA.—For season; qualified; 24; excellent reference. 121 Nevill Road, Stoke Newington.

LOCUM; disengaged September 4; 36; 5 ft. 10 in.; best experience. "Alpha," 50 Calthorpe Street, W.C.

SENIOR or Manager; qualified; 28; first-class English and continental experience. Reilly, Bracknell, Berks

MANAGERSHIP, with view to succession; married; also qualified; best references; deposit if required. Wilson, 51 Belmont Road, Fulham.

OUTDOORS Assistant or Manager; 26; qualified; single; good references; disengaged after September 18th. Dennis, 31 Street, Taunton.

MANAGER, with view to succession; excellent references; qualified; aged 35; married. 242/8, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

LOCUM (30); day or otherwise; had own businesses; takes interest if own; steady; strictly reliable. "Odontalgic," 11 Ashmere, Acre Lane, Clapham.

UNQUALIFIED Assistant seeks re-engagement; 25; married; abstainer; 8 years' experience; excellent references. S., 20 Road, Stanley, Liverpool.

MANAGER; permanent; Liverpool, or near; thoroughly qualified; aged 38; married; good references. "Statim," 110 Edgware Road, Kensington, Liverpool.

LOCUM, Manager or Dispenser; 28; thoroughly experienced; disengaged September 16. "Locum," 3 Clifton Grove, South Erdington, Birmingham.

SMART Counterman desires outdoors permanency; could not leave Branch; 26; 5 ft. 8 in.; excellent references. "Unqualified," 66 Well Street, Hackney, N.E.

ASSISTANT; 7 years' experience; 25; tall; gentlemanly appearance; has taken charge (twice) of a branch; good references. 142 Grove Road, Victoria Park, E.

ASSISTANT or Branch Manager; London and South Coast experience; qualified; 29; outdoors preferred; permanency. 9 Dock View Road, Barry Dock.

ASSISTANT or Manager; 25; qualified; Wholesale, Retail, and Dispensing; good references. W. N. (245/25), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

ASSISTANT or Manager; outdoors; qualified; 26; London Country experience; Extractor; disengaged September 25. "1", Hall, M.P.S. Vauxhall, Birmingham.

LOCUM-TENENS or Manager; disengaged September 16; recommended; aged 28. "Midlands" (238/9), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

SENIOR Assistant, with view to early succession, in good Dispensing business; Major; 25. "Agricola" (244/22), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

MANAGER or Locum-Tenens; excellent London and Store experience; qualified; aged 39; married. 244/16, c/o Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

MANAGER or Senior Assistant for Branch; qualified; aged 43; experienced; Manchester and Liverpool; reliable; outdoors; good references. Young, 7 Dorrington Place, Carlton Hill, Leeds.

LONDON.—Outdoors; seven years' first-class Retail experience; Scotsman; good Dispenser; disengaged shortly. "Antipyrine" (242/37), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

MANAGER, or similar position. Advertiser desires engagement; qualified, experienced; aged 28 years; good references. "Gum" (242/16), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

ENGAGEMENT wanted by an elderly but active Chemist (qualified by examination); references are exceptional. Ashrow, "Zim" (243/18), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

A YOUNG man, Clergyman's son, is willing to give his service return for board and lodging, for a time, as an Improver; fair dispenser; not much experience at counter. B., 28 Tredegar Road, Bow.

ADVERTISER desires responsible part-time engagement for even and alternate Sunday duty if required, vicinity of Keonlin Road; thoroughly experienced; aged 26. Wallace, 8 Pyrlaud Road, Cumbury, N.

QUALIFIED; experienced; 45; Locum or Branch Manager; Prescriber, Extractor; could invest, or purchase if satisfied; excellent testimonials; last job 15 months. "Alive," 39 Somers St. Southsea, Hants.

JUNIOR; 21; tall; 5 years' good country experience; excellent references; disengaged September 19; London preferred; in or out of short time for study; abstainer. "Derwent," 317 Fulham Road, Kensington, S.W.

CERTIFICATED Chemist, German, 34, with large business experience, wants situation as Chemist or in a similar line at the Cape in South resp. North America (California); first-class references. Address H. M. (7,811), c/o Rudolf Mosse, Hamburg.

LOCUM: Manager or Senior Dispenser; qualified; 23; disengaged in fortnight. 246/19, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

DISPENSER or Locum-tenens; disengaged September 13; aged 23; married; hospital experience. "Antipyrine," 22 Drummond Road, Brompton, S.W.

DISPENSER to Chemist or Doctor; good references and experience; aged 27; part or whole time; disengaged. "Dispenser," 115 Ivydale Road, N. E.C.

DRUGSTORES.—As Senior; 35; qualified; outdoors; first-class all-round experience; town or country. Address, 246/10, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

ASSISTANT, aged 33, married, 16 years' good-class experience, 2 yrs in Store, knowledge of Photography and Extraction. unqualified, disengaged, seeks permanency. "Molar," 43 Sherbourne Road, Birmingham.

MANAGER. Widows or others; middle-aged; very steady, painstaking, reliable, abstainer, single; many years managing Chemist's business, and others, also assisted medical men; Prescriber, Executor Surgery, Midwifery, &c.; engaged locum now, disengaged in fortnight; highest Medical and Chemists' references; permanency if suitable. "Medical," c/o Mrs. Evans, 26 Elsie Road, Tynham Road, Laveley, S.W.

WHOLESALE.

COMPETENT Clerk wishes for engagement in good house. "Anxious," 46 Well Road, Thornton Heath.

AS Representative; London, Midland, and South-coast connection; excellent references. Pearson, 35 Gillingham Street, Victoria, S.W.

APPROVED Chemist is open to undertake a London Agency or other suitable engagement for part-time. G. W., 51 Cloudestale Road, Balham, V.

AS Invoice or General Clerk in Wholesale House, London or abroad; experienced. 244/3, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

QUALIFIED (aged 37), to represent a representative house; in North of England preferred. "Permanency" (233/16), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

SCOTMAN, good experience, wishes situation, Wholesale house, London; Wet-room or Laboratory; good references. "Phenacetin" (233/3), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

SOAP and Perfumery.—Traveller (experienced) is open for an engagement with first-class house; good connection both in London and country. "Soap" (246/15), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

PHARMACEUTICAL Chemist, having sold his London Retail business, wishes to represent a first-class house in the Colonies or India. Address, "Colonies" (245/21), Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

SURGICAL Instruments.—Advertiser, having good experience in above, well acquainted with the market in England and the Continent, now with large firm of manufacturers, desires other situation; speaks German. 245/11, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

TRAVELLER: qualified; excellent experience Drug and Essential Oil trades and Road; would represent first class firm, preferably over ground requiring altogether about eight months in year to work; unexceptionable references. "Citrus" (244/27), c/o Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

TRAVELLER calling for 16 years on Wholesale and Retail Chemists and Ironmongers, &c., in Scotland; open for new engagement. Gough, Cathcart, Glasgow.

MISCELLANEOUS.

Special charges are made for Advertisements under this heading, which can be obtained on application.

WANTED. Postal Tuition in Pharmacy, Pharmaceutical Chemistry, and the Materia Medica of the B.P., by candidate for the L.A.H., Dublin; state terms. 243/16, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

"A TRULY fin-de-siècle stall is that marked 'Smart men take Daisies for the headache.' Here we have a row of 'smart men,' gloved and eye-glassed, with daisies in their button-holes, heads that turn about, and real eyes that open and shut. Can mortal genius farther go?—*Morning Leader.*

CHEMISTS' Shop-fittings.—Ranges mahogany drawers, with bevelled-edge glass labels and cut-glass knobs, shelving above, lockers below; mahogany dispensing-screens; counters with glass-case fronts; wall-cases; bent-front and flat-top counter-cases; counter-decks; tooth-brush cases; complete shop-rounds, &c.; every requisite for Chemists, new and second-hand; extensive stock to select from, at extremely low prices; practical men sent to all parts; estimates free. Matthews, Chemists' Fitter, 14 Manchester Street, Liverpool.

CHEMISTS' Shop-fittings.—Bright, cheap lot ready for immediate use; 12-ft. run of mahogany-fronted drawers, glass labels and knobs, shelving, lockers, and cornice complete; 12 ft. mahogany and plate glass serving-counter; handsome 6 ft. dispensing-screen, with bevelled-edge mirror in centre, and counter under with sponge-case; 6-ft. mahogany and glass wall-case, desk and perfumery-case with mirror-back; bent plate-glass counter-case with display and serving shelves; price £52 10s. the lot. Philip Josephs, 54 Old Street, City Road, London, E.C.

CUCUMBER AND GLYCERINE.

ROUSE'S Oculum Paste is the best for preparing Oculum Emulsion. Formulae and labels free with each jar; 3 lb. (for 3 lbs. emulsion), 2s. 3d.; 1 lb., 4s. 3d.; 7 lbs., 25s., post free. Rouse, 61 Charlotte Street, London, W.

N.B.—Oculum actually enter into the composition of this article.

Summary of Principal Contents of to-day's issue of "The Chemist and Druggist."

SOMETHING new in window screens is shown on p. 429.

A SHIP criticism of the British Medical Association is quoted in the *Times* (p. 426).

EDUCATIONAL MATTERS occupy about half of this number, beginning on p. 401.

A MURDER MAN writes brightly on his experience of the Bloomsbury Examiners (p. 404).

CUTTING in Sydney, N.S.W., appears to be desperate (p. 438).

A GUY who sold bad tr. rhei. got off with costs when he said it was a few years old (p. 399).

AN association of alchemy has been started in Paris, and they talk seriously and medicinally (p. 397).

WE have thirty chemists to whom new wine-licences have been granted, and we report one refusal which seems to be an illegation (p. 395).

THE German Apotheker Verein has presented Mr. E. M. Holmes with the Flückiger Medal, and refused to admit women to pharmacy (p. 395).

A MEDICAL student tells how he has got through three years of curriculum while acting as a chemist's assistant (p. 416).

NOTE on the scholarships, medals, and Government appointments open to those connected with pharmacy and medicine are given on p. 421.

THE S. Consul at Limoges advises American makers of medicinal specialties on the fine business they may do in France (p. 397).

MR. D. communicates his views on how to manage an examination paper, the information being intended for Preliminary students (p. 430).

A NOVEL apparatus for making compressed tablets is described and illustrated on p. 432.

CHEMISTS at Tunbridge Wells, Sheffield, and Lambeth have given evidence against thieves (pp. 394-5).

SOME OF COMMISSIONER KERR's words of wisdom during the past few days are collected in an article on p. 427.

THE WIDOWS' CLAUSE has been declared to be unconstitutional in Pennsylvania (p. 398).

THE INTERNATIONAL PHARMACOPEIA came up again at the Moscow Medical Congress (p. 398).

FURTHER NEWS in regard to the charge of theft against a Johannesburg drug-assistant is given on p. 398.

EDINGTON'S RINDERPEST-CURE appears to be a success (p. 398).

DEXTROFORM, guaiquin, holcaine, and ichthalbin are the new remedies upon which notes are given on p. 429.

MR. C. S. ASHTON comments upon the old book described in our last issue, and throws light on the Scriptural references to physic (p. 438).

A SERIOUS FIRE has occurred on the premises of Messrs. Davy, Hill & Son, Yates & Hicks, wholesale druggists, Southwark Street (p. 394).

AN ACTION has been commenced against a druggist in Toronto for selling Vin Mariani, on the ground that it is a beverage (p. 399).

SOME LETTERS and an editorial article are published in reference to the allegation that unqualified doctors' assistants sell poisons in contravention of the Pharmacy Act (p. 438).

THE DRUG SALES on Thursday were rather dull, and only about 25 per cent. of the goods offered changed hands. Essential oils have been brisk and cardamoms are dearer (p. 433).

EXCHANGE COLUMN-BARGAINS

TERMS.

DEPOSIT.—The purchaser of anything advertised in the Exchange Column may remit the amount to us, and we only pay the money deposited on advice from the remitter. We charge a commission of 6d. on any transaction of £2 or less, or 1s. if above that amount, which is payable by the purchaser.

Limited to the Advertisements of Surplus Stock, Shop Fittings, Apparatus, Photographic Goods, Books and Periodicals, Formulae, Addresses Wanted, and Articles Wanted.

1
2d. per word with name and address.

1d. per word if we register the address and attach a number.

No Advertisement inserted for less than 6d.

APPARATUS.

Rotatory pill-machine, tincture-press (Maw's), iron mortar and pestle (large), counter-scales; any reasonable offer; room wanted. C., 151 Hoxton Street, N.

BOOKS AND PERIODICALS.

"**British Medical Journal**," from January 1892, including 3 vols. bound; offers or exchange. H. S., 518 London Road, Sheffield.

What offers for 17 bound numbers of *Chemist and Druggist*, in good condition, years 1884 to 1893, loose numbers of 1893 and 1894? 239/5, Office of the C. & D.

Books, micro-objects.—Oliver's "Elementary Botany," 1s. 6d.; Atlas Oo.'s "Obemical Receipts," 12s. 6d. (cost guinea); Jago's "Advanced Obemistry," 2s. 6d.; Newth's "Elementary Practical Obemistry," 2s.; several dozen best micro-objects, 5s. per dozen, assorted botanical, diatoms, rocks; any above free on receipt of order to amount. HEATONS, Hebrew Road, Burnley.

DRUGS AND CHEMICALS.

Quininæ sulph., B.P., 2 lbs. 21s. cash, a fraction under 8d. an ounce. RUGG, Chemist, Croydon.

Antipyrin (Knorr), 8 1-oz. tins, 20s.; loletin, 1 oz., 1s.; 1/4 doz. Zymine peptonising-powder tubes, 3s.; post free. "ARGOL," 156 Green Lanes, N.

Mel ang. opt., about 3 cwt., 7 1/2 lb., in 15 and 25 free jars; cera flav. ang., about 1 cwt., 1s. 6d. lb.; f.o.r., any quantity. PALMER RICHARDS, Carmarthen.

OPTICAL AND PHOTOGRAPHIC.

Microscope (Orouch, No. 1, 1885), coarse and fine adjustments, inch and 1/2-inch objectives, 2 eye-pieces, camera lucida, polariscope, and analyzer, bullseye condenser on stand, spot lens, stage forceps, in box with lock and key, 5 guineas. S., Chemists' Club, Stonecutter Street, London, E.O.

SHOP FITTINGS.

Show-jars, pair Maw's, patterns 1 and 20, 24-in., complete, cost £9 9s.; offers. BAKER, 215 Lewisham High Road, S.E.

MISCELLANEOUS.

3 cwt. thyme, unent at present; offers. GREEN, Christchurch.

5-grain mahogany pill-machine; 6 Standard extract malt; waterpro sheeting, 6 ft. by 6. 243/31, Office of the C. & D.

Soda-water Trolley; a boy of eight can easily convey 3 dozen syphons and cases any distance; 35s., carriage paid. ARTHUR & Co., C. bridge.

Stokes's check-till, with 10 rolls paper, good condition; shop-rounder and ointment-jars, labels perfect, suit branch or surgery. SAM LAWRENCE, Oban.

Wooden shield-shaped tablet, about 26 by 21 in., gold-lettered "Porter, Wine and Spirit Stores"; nearly new; cost 7s. 6d. lettered price 6s. 6d. SHEPPEL, Chemist, Gateshead.

Overstocked, bought largely, quits new, 5 doz. enemas, cream (Ingram's expired patent), highly-enamelled black, oval leather hinged boxes, vagina-pipes, leather shields; 20s. d. z., sample price 2s. 9d. cash. WARNES Chemist, 333 Gray's Inn Road, W.O.

Stock and fixtures of a chemist's shop, comprising drugs, chemicals, medicines, and druggists' sundries, mahogany cornice and shelving, large wall-case with cupboards, flat and upright counter-cases, spot case, drawers, bottles, jars, scales, and usual utensils, &c.; in lots suit purchasers; 20 per cent. off drug-list. HALL, Chemist, Lancaster.

WANTED.

Dental-forceps (plated). Particulars and price to MIDDLEB, 26 Chancery Street, Peterhead.

The "Chemist and Druggist" for July 3, 1897, clean and complete. S. B., Office of the C. & D.

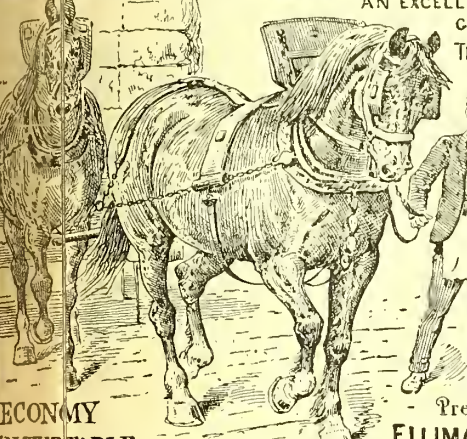
The "Chemist and Druggist" for November 12, 1892, clean and complete. J. R. R., Office of the C. & D.

Attfield's "Chemistry," "B.P.," latest editions. Also "Royal Road B.P." Lowest prices to GREEN, 20 Mount Street, Stafford.

Attfield's "Chemistry," Green's "Botany," Southall's "Materia Medica," Ganot's small or Stewart's "Physic," Ince's "Grammar." D., Bellefields Road, Brixton.

ELLIMAN'S ROYAL EMBROCATION

"AN EXCELLENT GOOD THING."



BOTTLES 2/2/6 3/6
JARS 10/6 20/.


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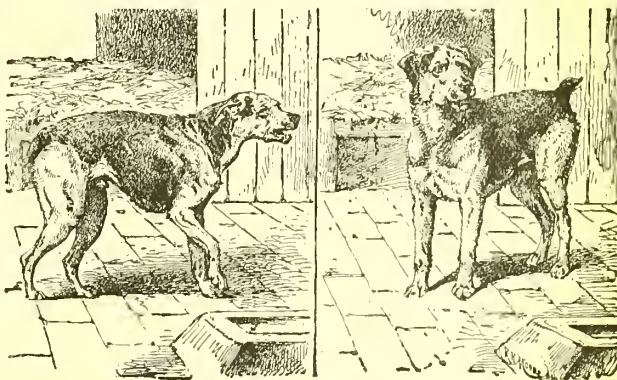
PRICES 1/- 2/-
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My Farm Bailiff has also found it of much value among my herd.
J. Barker, Master of Longborough, Co. Devon.
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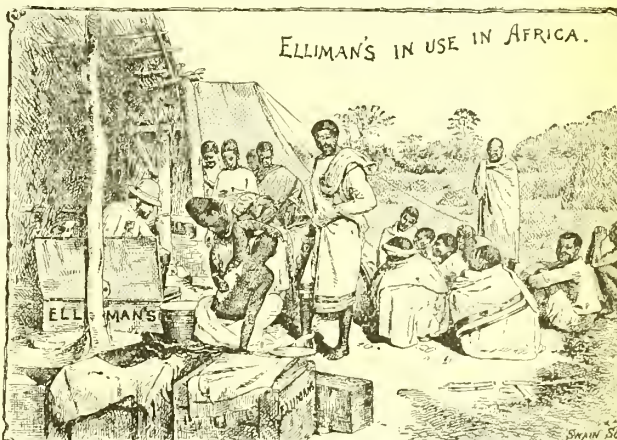
Large LIFEGUARDS' Show Card, 33 by 23, or 18 by 14, now ready; also attractive booklets, with short address. Free and carriage paid.

Elliman's £5 14s. Value, 10 per cent. Agreement.

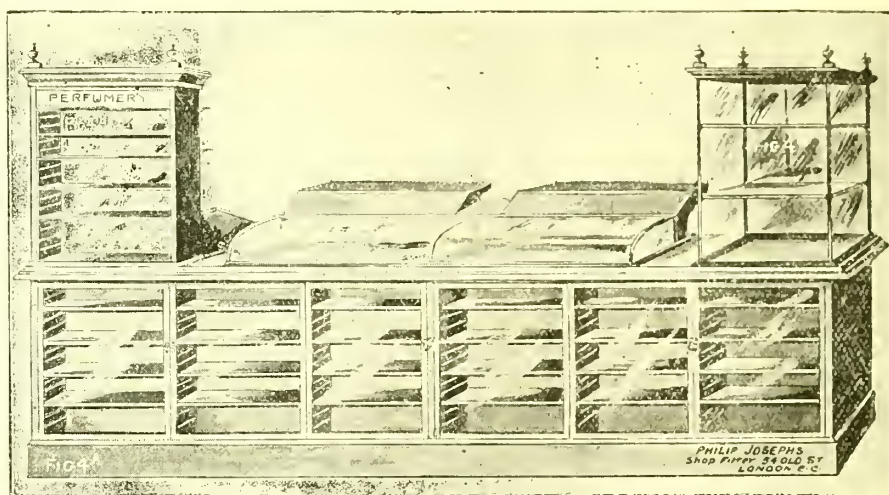


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ELLIMAN'S EMBROCATION. 8 1/2 d.
7/9, 10% discount upon gross lots, or assorted in general order.
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ESTABLISHED 1826.

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SHOP FITTER,

54-68 OLD STREET, CITY ROAD, LONDON, E.C.,

Will supply the Entire Fittings for Shops as stated under at Prices marked at head of column. Should any alterations in size or quantity be needed, the price will be increased or decreased accordingly.

A	B	C	D	E
£45	£55	£70	£80	£100
10-ft. panelled-front counter, solid mahogany top, fitted with 13 drawers, including till and label ditto; 6-ft. dispensing-counter to match, with glass dispensing screen; 10-ft. range of mahogany-fronted drawers, with glass knobs and labels, shelving, lockers, and cornice; 4 ft. by 8 ft. 6 in. glass wall-case; bent glass counter-case; desk and perfume-case; 120 gold-labelled bottles, various sizes, 1 doz. 1-lb. ung. jars, gold-labelled; and window enclosure, up to 6 ft. in length.	12-ft. panelled-front mahogany-top counter, with 13 drawers behind; 6-ft. ditto, with glass dispensing-screen; 12-ft. range of drug-drawers, glass knobs and labels, shelving, cornice, &c.; 6-ft. glass wall-case; bent-glass counter-case, desk, and perfume-case; 144 gold-labelled shop-rounds, various sizes; 1 doz. 4-lb. ung. jars, gold-labelled; and window enclosure, up to 8 ft. long, fitted with iron trams for carboys.	12-ft. wall-fitting, with mahogany-fronted drawers, glass labels and knobs, shelving, pilasters, and cornice; 12-ft. mahogany and plate-glass serving-counter, 6-ft. mirror-centre screen, with counter under; 6-ft. glass wall-case, 6-ft. mahogany and bent plate-glass counter-case, 4 ft. nest of counter-drawers, with till and label-drawers; desk and perfume-case, 1 gross of shop-rounds, gold labelled; 1 doz. 4-lb. ung. jars, and glass window enclosure to 8 ft. long.	14-ft. wall-fitting, with 70 mahogany-fronted drug-drawers, with glass labels and knobs, shelving, pilasters, and mirror poison-cup-board over, lockers under; 12-ft. mahogany and plate-glass counter; 6-ft. mirror-centre dispensing-screen, with plate-glass counter and sponge-case under; 8-ft. glass wall-case, 5-ft. mahogany and bent plate-glass counter-case, 8-ft. run of counter-drawers, including till-bowl and label-drawers; 144 gold-labelled shop-rounds, and 1 doz. 4-lb. ung. jars; desk and perfume-case; window enclosure up to 8 ft. long, fitted with 3 plate-glass shelves.	16-ft. wall-fitting, with 80 mahogany-fronted drawers, glass-bevelled labels & knobs, shelving, pilasters, and mirror poison-cup-board, &c.; 14-ft. mahogany and plate-glass counter, fitted with 23 drawers, including till and label-drawers; 7-ft. mirror centre dispensing-screen, with plate-glass counter and sponge-case under, fitted with drawers; handsome 10-ft. wall-case, 6-ft. mahogany and bent plate-glass counter-case, 180 assorted shop-rounds, and 16 4-lb. jars with handsome shield enamel labels; plate-glass tooth-brush case, desk and perfume-case; window enclosure up to 10 ft. long, with 3 plate-glass shelves on bars and brackets.

A Word to the Wise.

In these days of severe competition we find that the modern *fin-de-siècle* Chemist requires his shop fitted up brighter and more attractive than ever, but still does not wish to spend the larger amount of his capital in doing so.

We have studied as a speciality in our business the supplying of bright, up-to-date, and durable Fittings at Prices that will defy Competition, and have now made it possible to start a Store or open a Branch for a third of the money it cost a few years ago; for instance, the above.

Colonial Druggists will find us up-to-date in price and style. We can recommend them to columns C, D, or E.

We keep a very large stock, and can supply you with and deliver Fittings in twenty-four hours.

We shall also be pleased to quote for and mail sketches and particulars of single articles either new or secondhand.

Our stock of secondhand or shop-soiled fittings is constantly varying, and is a very extensive one. Cannot we fix you up? Write us and see.

Our Goods are Pleasing to the Eye and Easy to the Pocket.

To all
whom it
may concern.

Whereas it has been brought to our knowledge that an article purporting to be HYDROBROMIC EXTRACT of CINCHONA or LIQUOR CINCHONÆ HYDROBROM. is being offered for sale in this country, the same not being of our manufacture,

WE HEREBY GIVE NOTICE that the use of Hydrobromic Acid for the extraction of Cinchona Bark is secured to us by LETTERS PATENT, and no preparation being a genuine HYDROBROMIC EXTRACT of CINCHONA or LIQUOR CINCHONÆ HYDROBROM. can be manufactured or sold without infringement.

WE FURTHER GIVE NOTICE that we have instructed our Solicitors to institute immediate proceedings against any person or persons selling or offering for sale, directly or indirectly, whether by wholesale or retail, any HYDROBROMIC EXTRACT of CINCHONA or LIQUOR CINCHONÆ HYDROBROM. except that manufactured under our Patent as aforesaid.

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THE
School of Pharmacy
OF THE
Pharmaceutical Society of Great Britain.

FIFTY - SIXTH SESSION.

The School has been entirely re-organised, and will Re-open on MONDAY, OCTOBER 4, 1897.

PROFESSORS—

Botany—J. REYNOLDS GREEN, Sc.D., F.R.S., F.L.S.

Chemistry—J. NORMAN COLLIE, Ph.D., F.R.S.

Materia Medica & Pharmacy—HENRY G. GREENISH, F.I.C., F.L.S. (Dean).

During the Session there will be two complete Courses of Instruction—an Elementary Course, which will commence in October and terminate in June, and an Advanced Course, which will commence in October and terminate in March.

The Prizes of the last Session will be distributed by the President on Monday, October 4th, at 3 P.M., and an Inaugural Address to the Students will be given by Professor H. McLeod, F.R.S., Professor of Chemistry, Cooper's Hill College. All Students and their friends are invited to be present. After the proceedings the various departments of the School will be open for the inspection of visitors.

The Dean (Professor Greenish) will attend at the School on Monday, October 4th, between the hours of 10 A.M. and 1 P.M., to receive Students and to furnish information relating to the courses of study.

The Professor of Botany and the Professor of Chemistry will also be present to give advice with reference to their special subjects.

Full information will be found in the Prospectus of the School, application for which should be made to

THE REGISTRAR OF THE PHARMACEUTICAL SOCIETY,
17 Bloomsbury Square, London, W.C.,

who will also receive applications for admission to the School and the Fees.

For advice respecting the course of study to be pursued in particular cases, application should be made to

THE DEAN OF THE SCHOOL OF PHARMACY,
17 Bloomsbury Square, London, W.C.

The Benches in the Laboratories will be allotted in the first instance to those Students who enter for a full Course, in the order in which they are applied for.

THE WESTMINSTER COLLEGE

OF CHEMISTRY & PHARMACY.

Principals: G. S. V. WILLS, F.L.S., Ph.C., &c.; and H. WOOTTON, B.Sc. (Lond.).

FEES.

(Absolutely Inclusive.)

MINOR.

Complete Course, £8 8s.

Six Months, £12 12s.

Twelve Months, £15 15s. (for this fee a Student can pass both Minor and Major).

MAJOR.

Complete Course, £6 6s.

Until qualified, £10 10s.

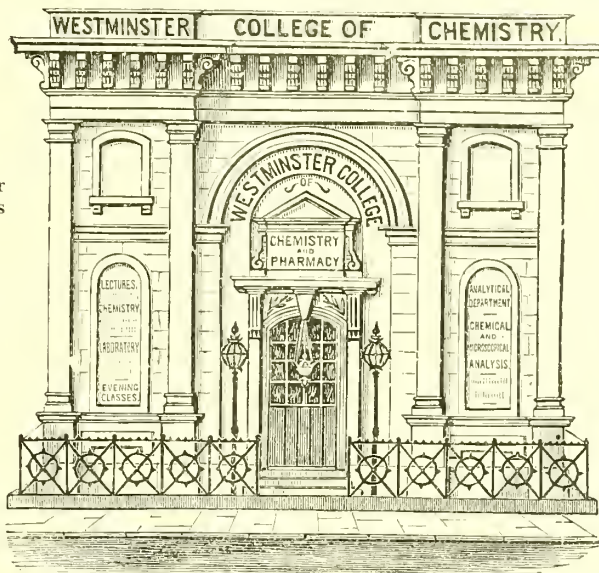
PRELIMINARY.

Until qualified, £5 5s.

APOTHECARIES' HALL.

Complete Course, £5 5s.

Special Classes are held for Lady pupils.



The aim of the Principals is to maintain the Westminster College as the leading institution for pharmaceutical education.

The thorough and practical nature of the instruction given is proved by the fact that upwards of 3000 students have qualified from this institution since its establishment.

At no other school are the opportunities for thorough and successful training so complete. The Principals spare no expense or trouble in order to provide the greatest facilities and individual attention to students, so as to ensure both their present success and permanent benefit in after life. Westminster College men hold high positions in the pharmaceutical world, both at home and in the Colonies.

N.B.—Each Student who enters this College for a Six Months' Course of Instruction is entitled to *free tuition for the Major*, provided he pass the Minor Examination at his first attempt. In addition to the above, *all* those students who are successful in obtaining Medals in the College Prize Competitions are eligible to continue their studies for the Major Examination *free of extra cost* for any period not exceeding Six Months.

THE NEXT COMPLETE COURSE OF LECTURES AND GLASSES WILL BE COMMENCED ON WEDNESDAY, OCTOBER 13th.

N.B.—In addition to the ordinary College work, Mr. Wills holds special Tutorial Classes, for which there is no extra charge. Students can enter College at any time, but are advised to commence their studies at the beginning of a Course.

Students who enter this College may be sure of receiving a sound and systematic course of instruction in all the subjects required for the Medical, Pharmaceutical, and Apothecaries' Hall Examinations.

No greater proof of the thoroughness of the education can be adduced than the College Pass List for the past Session. During the year **108** Students passed their examinations. **11** successful Major candidates from the various Schools and Colleges competed for the Council prizes in July last, with the result that the **PEREIRA MEDAL** was awarded to

P. W. A. KNIGHT, a Student of the Westminster College of Chemistry and Pharmacy.

It will be seen from the *Pharmaceutical Journal* that no other candidate reached the standard required for the Silver or Bronze Medal, consequently no other prize was awarded.

Mr. J. R. JONES, one of the Westminster successful Major candidates at the July examination, passed the Minor in April last this being the fourth Student who has recently passed the Major after *three months'* study at this College.

WESTMINSTER COLLEGE TEXT-BOOKS.

It is claimed by the Principals that the following Text-books have been successfully used by the great majority of Pharmaceutical Students for very many years, and now they are as popular as ever.

Post Free.				Post Free.			
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WILLS' Materia Medica	4 0	WILLS' Guide to Prescription Reading	...	1 3	
Elements of Pharmacy	5 6	Prescripta	...	0 10	
Handbook of Practical Analysis	...	...	2 2	" Book of Doses of B.P.	...	0 4½	
Handbook of Volumetric Analysis	...	...	2 6	" Book of Dried Medicinal Specimens	...	5 3	
Book of 120 Autograph Prescriptions	...	...	1 3	" Materia Medica Cabinet	...	5 9	
Key to 120 Autograph Prescriptions	...	...	1 3	WOOTTON'S Problems in Chemical Physics	...	1 8	

Wills' Universal Postal System. Established nearly a Quarter of a Century. **Invaluable to Apprentices and Assistants.**

Means of these Lectures a thorough fundamental knowledge of the subjects is obtained, thereby saving considerable expense afterwards. The Lectures may be completed in 3 months, or extended to a period of 3 years.

FEES—Minor or Apothecaries' Hall ... £1 1 0 | Major or Preliminary ... £0 10 6

For Prospectus, &c., apply to E. WALDEN, Secretary, Trinity Square, Borough, LONDON.

METROPOLITAN COLLEGE OF PHARMACY

Principal - - W. WATSON WILL.

This College was established with the object of providing a sound and honest education for the Pharmaceutical Student in those branches of science with which he is directly brought in touch in the practice of Pharmacy. Every facility is provided for the systematic study of the following subjects:—Chemistry (Inorganic, Organic, and Practical), Botany, Vegetable Histology, Pharmacognosy, Physics, and Practical Pharmacy.

SESSIONS.

WINTER—

September 1 to December 31.

SPRING—

January 1 to April 15.

SUMMER—

April 16 to July 24.

During each session a complete course of lectures is delivered on all the subjects required for the Pharmaceutical Examinations. Students are advised to enter at the commencement of a course to ensure success. Special subjects can be selected at the option of the student. Hours of attendance, 9 A.M. to 6 P.M. All Students' work is under the direct supervision of the Principal and Demonstrators.

FEES.—Major Course, Six Guineas. Minor Course, Ten Guineas. These fees are absolutely inclusive; there is no extra or petty charges.

EXAMINATION RESULTS, SESSION 1896-97.

Majors 10, Minors 79, Hall 9. July, 1897.—Majors 3, Minors 25.

During the Session 1896-97 nearly one-third of the Successful Minor Candidates were Students of this College. The percentage of Major Students who have qualified from this centre during the past four years is 72, whilst 69 per cent. of the Minor Students were successful in the same period. These results are based on the Total number of Presentations, and a full list can be had on application.

For Syllabus (New) and full particulars, all communications should be addressed to the Secretary,

WALTER S. CARVER, 162 Kennington Park Road, LONDON, S.E.

IMPERIAL COLLEGE OF CHEMISTRY

Principal — **FREDERICK DAVIS.**

Students reading with Mr. Davis pass the respective Examinations in the shortest possible time and at the least expense. The instruction imparted is sound and lasting; cram is not permitted. The work is thoroughly practical, and the theory fully explained.

PASS LISTS (Minor)—

JULY, 1896, Nine Presented themselves, of whom **Eight Passed**, including Messrs. Rainey and Roberts, who had not studied elsewhere.

OCTOBER.—Seven Presented themselves, of whom **Five Passed**, including Mr. J. A. Rambaut at his first attempt, not having studied elsewhere.

Full Pharmaceutical Course, **TEN GUINEAS.** Single Subjects may be taken if desired. Evening Classes are held.

51 IMPERIAL BUILDINGS, LUDGATE CIRCUS, LONDON, E.C.

JANUARY, 1897.—Six Presented themselves, of whom **Five were Successful**, including Mr. J. Reed, who had not studied elsewhere.

APRIL.—Seven Presented themselves, **Six were Successful**, including Messrs. Dutton and Foster.

JULY.—Eight Presented themselves, **Six were Successful**, including Messrs. Bustard and Sanderson.

OWENS COLLEGE, MANCHESTER. PHARMACEUTICAL DEPARTMENT.

DEAN.—Professor ALFRED H. YOUNG, M.B., F.R.C.S.

PROFESSORS AND LECTURERS.

Physics—Professor A. SCHUSTER, Ph.D., F.R.S. Demonstrators and Assistant Lecturers—O. H. LEES, D.Sc.; ALBERT GRIFFITHS, M.Sc.; ROBERT BEATTIE, B.Sc.

Chemistry—Professor HAROLD B. DIXON, M.A., F.R.S.

Organic Chemistry—Professor W. H. PERKIN, Ph.D., F.R.S. Demonstrators and Assistant Lecturers—GEO. H. BAILEY, D.Sc., Ph.D.; ARTHUR HARDEN, M.Sc., Ph.D.; P. J. HARTOG, B.Sc.; EDWARD HAWORTH, M.Sc.

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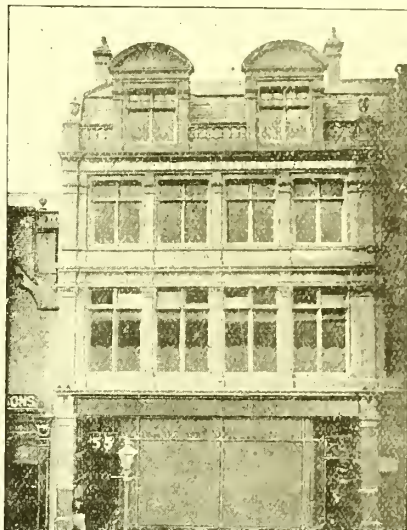
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Afternoons, 2 to 4.30, Tuesdays and Thursdays, Dispensing.

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Wednesdays: Practical Chemistry and Dispensing.

Fridays: Botany, Materia Medica, and Pharmacy.

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Wednesdays: Practical Chemistry.

Thursdays: Botany and Materia Medica.

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LONDON: JOHN MURRAY, ALBEMARLE STREET.

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL.

THE WINTER SESSION will open on **MONDAY, OCTOBER 4th, at 3 P.M.** Baron STRATHCONA and MOUNT ROYAL of GLENCOE, G.C.M.G., LL.D., Chancellor of McGill University, Montreal, will address the Students at the opening meeting and Distribute the Prizes gained during the previous year.

The **ANNUAL DINNER** of the Past and Present Students and their friends will take place the same evening at the Cafe Royal, Regent Street, at 7 o'clock, STORER BENNETT, Esq., F.R.C.S., in the chair.

HOSPITAL STAFF AND LECTURERS.

Physicians—Dr. Cayley, Dr. Sidney Coupland, Sir Douglas Powell, Bart., M.D., Dr. J. K. Fowler, Dr. C. Y. Biss.
Assistant Physicians—Dr. W. Pasteur, Dr. W. E. Wynter, Dr. A. F. Voelcker.

Obstetric Physician—Dr. W. Duncan.
Consulting Physician to the Skin Department—Dr. Robert Liveing.
Physician to the Skin Department—Dr. J. J. Pringle.
Assistant Obstetric Physician—Dr. R. Boxall.
Consulting Surgeons—Mr. Nunn, Mr. George Lawson.
Surgeons—Mr. Henry Morris, Mr. Andrew Clark, Mr. A. Pearce Gould.
Assistant Surgeons—Mr. J. Bland Sutton, Mr. John Murray, Mr. T. H. Kellock.

Ophthalmic Surgeon—Mr. William Lang.
Aural Surgeon—Mr. Stephen Paget.
Consulting Dental Surgeon—Mr. J. S. Turner.
Dental Surgeon—Mr. Storer Bennett.
Assistant Dental Surgeon—Mr. W. Hern.
Other Lecturers—Dr. Voelcker, Dr. Robinson, Dr. Young, Dr. Plimpton, Dr. W. J. Mickie.

The Hospital contains 320 Beds. There are Special Departments for Cancer, Syphilis, Diseases of Women and Children, Diseases of the Eye, Skin, Throat and Ear, and for cases requiring Electrical Treatment.

There are eighteen Resident Clinical Appointments open to Students of the Hospital annually.

Two Open Entrance Scholarships, value £100 and £60, will be competed for on September 23rd and 24th, and one Entrance Scholarship, value £60, in Anatomy and Physiology, open to Oxford and Cambridge Students only, on October 5th.

Inclusive Fee 120 guineas, or by three yearly instalments of 60 guineas, 40 guineas, and 30 guineas.

Special terms are made in favour of University Students who have already commenced their medical studies and of University of London Students who have passed the Preliminary Scientific Examination.

The new School Buildings, now in progress, will provide completely equipped laboratories for Physiology, Pathology, and Bacteriology, and extended facilities for the teaching of Anatomy, Chemistry, Biology, Physics, &c.

The Residential College adjoining the Hospital provides accommodation for thirty Students.

For further information apply at the Hospital to the Resident Medical Officer, or to W. PASTEUR, M.D., Dean.

**ST. MARY'S HOSPITAL MEDICAL SCHOOL,
PADDINGTON, W.**

THE WINTER SESSION begins on **OCTOBER 1st**, with an Introductory Address at 4 P.M. by Dr. GOW.

The **ANNUAL DINNER** will be held in the Evening, at the King's Hall, Holborn Restaurant, Mr. A. J. PEPPER, F.R.C.S., in the Chair.

ENTRANCE SCHOLARSHIPS IN NATURAL SCIENCE.

One of £144, two of £78 15s., one of £52 10s., two of £57 15s. (these two open to Students from Oxford and Cambridge), will be awarded by Examination on September 22nd and 23rd.

There are Sixteen Resident Appointments in the Hospital open to Students without expense. The School provides complete preparation for the higher Examinations and Degrees of the Universities. Special attention is directed to the fact that the authorities of the Medical School have for the first time thrown open all the Special Classes for the Higher Examinations free to Students.

The Residential College is at present at 33 & 35 Westbourne Terrace, W. Terms may be had on application to the Warden, Mr. H. S. Collier.

CLARENCE MEMORIAL WING.

The Foundation Stone of this important addition to the Hospital was laid by H.R.H. the PRINCE of WALES, and the first portion, the new Out-patients' Department will be finished in September next. This New Wing will provide a new Out-patients' Department, Wards for Lying-in Women, and a Residential College for Medical Officers and Students, who will then be close to their work and directly under the influence of the Medical School.

HOSPITAL STAFF.

Consulting Physicians—Sir Edward Sieveking, M.D.; Sir William Broadbent, Bart., M.D.; Dr. Braxton Hicks, F.R.S. (Accoucheur). Consulting Surgeons—Mr. H. Spencer Smith; Mr. H. Howard Hayward (Dental). Physicians—Dr. Oheadle, Dr. Lees, Dr. Sidney Phillips; Out-patients—Dr. R. Maguire, Dr. A. P. Luff, Dr. H. A. Cayley. Physicians Accoucheur—Dr. Montagu Handfield-Jones, Dr. W. J. Gow (Out-patients). Surgeons—Mr. Edmund Owen, Mr. Herbert W. Page, Mr. A. J. Pepper; Out-patients—Mr. A. Q. Silcock, Mr. J. Ernest Lane, Mr. H. S. Collier. Ophthalmic Surgeons—Mr. G. A. Critchett, Mr. H. Juler. Aural Surgeons—Mr. G. P. Field, Dr. William Hill (Out-patients). Skin Department—Mr. Malcolm Morris. Throat Department—Dr. Scanes Spicer. Dental Surgeon—Mr. Morton Smale.

OTHER LECTURERS, &c.

Physiology—Dr. Waller, F.R.S.; Mr. W. L. Symes (Assistant). Chemistry—Dr. A. P. Laurie, M.A. Mental Diseases—Dr. T. B. Hyslop. Tropical Diseases—Dr. John Anderson, O.L.E. Electro-Therapeutics—Dr. Cagney. Biology—Mr. W. G. Rislewood. Anaesthetics—Mr. Henry Davis. Casualty Physician—Dr. John Broadbent. Medical Registrar—Dr. Poynton. Surgical Registrar—Mr. W. V. Low. Bacteriologist—Mr. H. G. Plimmer.

For prospectus apply to Mr. F. H. MADDEN, School Secretary.

G. P. FIELD, M.D., Dean.
A. P. LUFF, Sub-Dean.

THE LONDON HOSPITAL MEDICAL COLLEGE.

The WINTER SESSION will commence on **Friday, Oct 1.**

The Hospital is the largest general hospital in the kingdom, and contains nearly 800 beds. Number of in-patients last year, 11,337; out-patients, 158,002; accidents, 14,625.

Surgical operations daily. Major operations in 1896, 2,196.

APPOINTMENTS.—Sixty qualified resident or salaried appointments are made annually. Dressers, Maternity Assistants, Clinical and Post-mortem Clerks are appointed every three months. All appointments are free to Students of the Hospital. Resident officers have free board.

SCHOLARSHIPS AND PRIZES.—Entrance Scholarships, value £120, £60, £60, £35, £30, and £20, will be offered for competition at the end of September. Numerous scholarships and prizes are given annually.

FEES, 120 guineas in one payment, or 130 guineas by instalments. A reduction of 15 guineas is allowed to the sons of members of the profession. Luncheons or dinners at moderate charges can be obtained in the Students' Club. The Students' Clubs Union, embracing all the scientific, social, and athletic clubs, is available to all Students. The Clubs Union Ground is at Lower Edmonton.

The Metropolitan, Metropolitan District, East London, and South-Eastern Railway Stations are close to the Hospital and College.

For further information apply personally, or by letter, to

Mile End, E. MUNRO SCOTT, Warden.

GUY'S HOSPITAL MEDICAL SCHOOL

The WINTER SESSION will begin on
MONDAY, OCTOBER 4.

ENTRANCE SCHOLARSHIPS of the combined value of £410 are awarded annually, and numerous prizes and medals are open for competition by Students of the School.

The number of patients treated in the wards during last year exceeded 6,000.

All Hospital Appointments are made strictly in accordance with the merits of the Candidates, and without extra payment. There are 22 Resident Appointments open to Students of the Hospital annually without payment of additional fees, and numerous Non-resident Appointments in the general and special departments. The Queen Victoria Ward, recently reopened, will provide additional accommodation for gynaecological and maternity cases.

The College accommodates about 60 Students, under the supervision of a Resident Warden.

The Dental School provides the full curriculum required for the L.D.S., England.

The Clubs' Union Athletic Ground is easily accessible.

A handbook of information for those about to enter the medical profession will be forwarded on application.

For the Prospectus of the School, containing full particulars as to fees, course of study advised, regulations of the College, &c., apply, personally or by letter, to the Dean, Guy's Hospital, London Bridge, S.E.

**NATIONAL DENTAL HOSPITAL & COLLEGE,
GREAT PORTLAND STREET, W.**

The WINTER SESSION 1897-98 will commence on **Monday, Oct. 4th** in the **NEW BUILDING** situated at the corner of Great Portland and Devonshire Streets, W.

The accommodation and fittings are in accordance with the latest requirements for efficient teaching in all branches of the Science and Art of Dental Surgery.

The Stopping Room, with space for sixty chairs, is well lighted and warmed and ventilated after approved methods.

Other large rooms are arranged as a Mechanical Laboratory, Special Demonstration Room, Students' Common Room, &c.

There are also a Metallurgical Laboratory, Library, and Museum. The Waiting Rooms, Extraction Rooms, and Lecture Hall are on the ground floor.

The Building is lighted throughout by electricity, and there is also a current for motors in the Stopping Room.

Each Student on entering the School passes through a preliminary course under the care of a Demonstrator, and all the members of the Staff take part in chair-side teaching. The Medical Tutors assist Students before each examination of the R.O.S.

The Calendar, containing full information as to Lectures, Fees, Prizes, and an ENTRANCE EXHIBITION will be sent on application.

SIDNEY SPOKES, Dean.

MASON COLLEGE, BIRMINGHAM.

**QUEEN'S FACULTY OF MEDICINE,
1897-98.**

THE WINTER SESSION WILL COMMENCE ON FRIDAY, OCTOBER 1.

The DEAN (Professor WINDLE, D.Sc., M.D., will see PARENTS or STUDENT on the 28th, 29th, and 30th of September, between the hours of 10 and One.

The Courses qualify for Diplomas of all Licensing Bodies, and for Degrees in Medicine and Surgery of British Universities. There are various scholarships, entrance and otherwise.

CLINICAL INSTRUCTION is given at the General and the Queen's Hospitals, which have a united total of over 400 beds. There are special departments for Eye, Skin, Ear and Throat, and Special Diseases of Women. Students can also attend the City Lunatic Asylum and the Fever Hospital, the Eye, Orthopaedic, and Ear and Throat Hospitals.

The **DENTAL DEPARTMENT**, in conjunction with the General, Queen's, and Dental Hospitals, affords a complete curriculum for all Dental Diplomas. There is an Entrance Scholarship, and Medals and Honour Certificates are awarded in the Classes.

There are also Faculties of Arts and Science. Syllabuses, containing full particulars, are published separately.

A SYLLABUS of the Faculty of Medicine, containing full information, may be had gratis from Messrs. Cornish, New Street, Birmingham, or on application at the College.

ST. ANDREWS UNIVERSITY. UNIVERSITY COLLEGE, DUNDEE.

SESSION 1897-98.

PRINCIPAL—J. YULE MACKAY, M.D.

MEDICAL DEPARTMENT.

Chemistry, 11 a.m. daily, except Saturday.—Professor James Walker, D.Sc., Ph.D., and Demonstrators.

Practical Chemistry, 2 to 4 p.m., Monday, Wednesday, and Friday.—Professor James Walker, D.Sc., Ph.D., and Demonstrators.

Physics, 9 a.m. daily.—Professor Kuenen, Ph.D., and Demonstrator.

Natural History, 10 a.m. Monday, Wednesday, and Friday.—Professor D'Arcy W. Thompson, M.A.

Botany, 12.30 p.m. daily.—Professor Geddes.

Anatomy (Junior), 10 a.m. daily; (Senior), 12 noon, daily.—Professor J. Yule Mackay, M.D.

Practical Anatomy, daily.—Professor J. Yule Mackay, M.D.

Physiology and Practical Physiology, 2 p.m. daily, except Saturday.—Professor Waymouth Reid, B.A., M.B.

Systematic Surgery, 1 p.m. Monday, Wednesday, and Friday.—David MacEwan, M.D.

Operative Surgery, 4 p.m. Tuesday and Friday.—David MacEwan, M.D.

Medical Jurisprudence and Public Health, 8 a.m. daily.—Chas. Templeman, M.D., D.Sc.

Clinical Medicine, 11 a.m. daily (Royal Infirmary).—A. M. Stalker, M.A., M.D., and J. Mackie Whyte, M.A., M.B.

Clinical Surgery, 10 a.m. daily (Royal Infirmary).—David MacEwan, M.D., and D. M. Greig, M.B., F.R.C.S.Ed.

Mental Diseases, daily at Royal Asylum.—James Rorie, M.D.

Ophthalmology, daily at Eye Institution.—A. McGillivray, M.D., &c.

* Summer Session.

DUNDEE ROYAL INFIRMARY.

The Infirmary contains 286 Beds, with a Special Ward for the Treatment of Diseases of Children. Two Resident Qualified Assistants are appointed annually. Clinical Clerks and Dressers are attached to the Physicians and Surgeons; and Students are appointed to assist in the Post-Mortem room. Instruction in Practical Pharmacy is given in connection with the Dispensary. Out-patients are seen daily at A.M. The instruction given at the Infirmary is recognised for purposes of graduation by all the Scottish Universities, and by the Royal Colleges of England and Scotland. Further information may be had on application to the MEDICAL SUPERINTENDENT.

DUNDEE ROYAL ASYLUM.

The Appointments include a Qualified Resident Assistant and a Resident Clinical Clerk. Clinical Instruction in Mental Diseases is given at the Asylum.

The Session commences on TUESDAY, October 5.

Further information as to Scholarships, &c., may be had on application.

R. N. KERR, Secretary.

UNIVERSITY OF EDINBURGH.

Principal { SIR WILLIAM MUIR, K.C.S.I., D.C.L.,
LL.D., Ph.D., &c.

The WINTER SESSION opens early in October, and closes about the end of March; the SUMMER SESSION opens at the beginning of May, and closes about the end of July.

FACULTY OF MEDICINE.

Dean—Professor THOMAS R. FRASER, M.D., LL.D., F.R.S.

The Faculty embraces twelve Chairs and seven Lectureships; and attached to these Chairs there are about thirty Assistants and Demonstrators. Instruction is given in all the main branches of Medical Science, viz. :—

Professors.

Chemistry	Alex. Crum Brown, M.D., D.Sc., LL.D.
Zoology	J. Cosser Ewart, M.D.
Botany	Isaac Bayley Balfour, M.D., D.Sc.
Physics	P. G. Tait, M.D., D.Sc.
Anatomy	Sir William Turner, M.B., D.C.L., LL.D.
Physiology	William Rutherford, M.D.
Materia Medica	T. R. Fraser, M.D., LL.D.
Pathology	William S. Greenfield, M.D.
Medical Jurisprudence and Public Health	Sir Henry D. Littlejohn, M.D.
Medicine	Sir T. Grainger Stewart, M.D.
Surgery	John Chiene, M.D.
Midwifery	Alexander Russell Simpson, M.D.
Clinical Surgery	Thomas Annandale, M.D.
Clinical Medicine	Sir T. Grainger Stewart, M.D., T. R. Fraser, M.D., Wm. S. Greenfield, M.D., A. R. Simpson, M.D. (on Diseases of Women).

University Lecturers.

Mental Diseases	T. S. Clouston, M.D.
Diseases of the Eye	G. A. Berry, M.B.
Clinical Instruction on Diseases of Children	J. Carmichael, M.D., and J. Playfair, M.D.
Embryology and Vertebrate Zoology	J. Beard, D.Sc.
Regional Anatomy	D. Hepburn, M.D.
Advanced Practical Physiology	E. W. Carlier, M.D.
Experimental Pharmacology	W. C. Sillar, M.B., B.Sc.
Pathological Bacteriology	R. Muir, M.D.
Physics	C. G. Knott, M.A., D.Sc.

Practical Instruction is afforded, under the superintendence of the Professors, in Laboratories with the necessary appliances, and in Tutorial and Practical Classes connected with the above Chairs, and opportunities are afforded to Students and Graduates to extend their practical knowledge and engage in original research.

Opportunities for Hospital Practice are afforded at the Royal Infirmary, the Hospital for Sick Children, Maternity Hospital, the City Hospital, and the Asylum for the Insane. Upwards of 1,500 beds are available for the Clinical Instruction of Students of the University.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.); and Diplomas in special branches of Medical and Surgical Practice may also be conferred on Graduates in Medicine and Surgery of the University.

The minimum Class Fees for M.B. and Ch.B., including Hospital Fee (£12), amount to about £115, and the Matriculation and Examination Fees to £28 7s. An additional Fee of £10 10s. is payable by those who proceed to M.D., and £10 10s. by those who proceed to Ch.M.

The annual value of the Bursaries, Prizes, Scholarships, and Fellowships in the Faculty of Medicine amounts to about £3,400, and that of the other Bursaries, &c., tenable by Students of Medicine, amounts to about £1,820.

Instruction is also given in Public Health, and the Degrees of B.Sc. and D.Sc. in Public Health are conferred by the University.

Residences for Students, Graduates, and others, situated within easy reach of the University, afford excellent board and lodging on very moderate terms.

Further information as to Matriculation, the Curricula of Study for Degrees, &c., may be obtained from the Dean of the Faculty of Medicine, or from the Clerk of Senatus; and full details are given in the University Calendar, published by James Thin, 55 South Bridge.

By Authority of the Senatus,

L. J. GRANT,

Secretary of Senatus.

September, 1897.

The UNIVERSITY of DURHAM COLLEGE of MEDICINE, NEWCASTLE-UPON-TYNE.

The Degrees in Medicine, &c., of the University of Durham are open both to men and women.

The WINTER SESSION, 1897-98, will be opened on Friday, October 1st, when the Scholarships and Prizes will be presented by the Right Hon. LORD BARNARD.

LECTURES—WINTER SESSION, 1897-98.

Anatomy—Professor Howden, M.A., M.B., F.R.S.E.
Physiology—Professor Oliver, M.A., M.D., F.R.C.P., and Geo. E. Williamson, M.A., F.R.C.S.
Chemistry—Professor Bedson, M.A., D.Sc.
Medicine—Professor Philipson, M.A., M.D., D.C.L., F.R.O.P.
Surgery—Professor Arnison, M.D., D.C.L., M.R.C.S., and Fredk. Page, M.A., M.D.
Midwifery and Diseases of Women and Children.—T. C. Nesham, M.D.
Hygiene—Henry E. Armstrong, D.Hy.
Psychology—T. W. McDowall, M.D.
Physics—Professor Henry Stroud, M.A., D.Sc.
Bacteriology—Professor Murray, M.A., M.D., M.R.O.P.

ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

MEDICAL AND SURGICAL STAFF.

Physicians—Drs. Drummond, Oliver, Limont, and Murray.
Assistant Physicians—Drs. Beattie and Coley.
Surgeons—Drs. Hume and Page, Mr. Williamson and Mr. Morison.
Assistant Surgeons—Mr. Walter Ridley, Mr. A. M. Martin, Mr. H. B. Angus and Mr. J. V. W. Rutherford.
Eye Department—Mr. G. E. Williamson.
Throat and Ear Department—Mr. Walter Ridley.
Skin Department—Dr. J. Limont.
Pathologist—Dr. Thomas Beattie.
Orthopædic Department—Mr. A. M. Martin.
Dental Surgeon—Mr. R. L. Markham.
Chloroformist—Dr. W. D. Arnison.
Surgical Registrars—Mr. John Clay and Mr. J. D. Wardale.
House Physician—Mr. Percival Davidson.

The Royal Infirmary contains 280 beds. Clinical Lectures are delivered by the Physicians and Surgeons in rotation. Pathological Demonstrations are given, as opportunity offers, by the Pathologist. Practical Midwifery can be studied at the Newcastle Lying-in Hospital, where there is an outdoor practice of about 500 cases annually. Lectures are given on Psychological Medicine in the College of Medicine, and clinical instruction at the Northumberland County Asylum, &c., by Dr. McDowall, Medical Superintendent. Special Courses of Instruction in Outdoor Sanitary Practice and in the Hospital for Infectious Diseases are given by the City Officer of Health, Dr. H. E. Armstrong.

FEES.

- (a) A Composition Ticket for Lectures at the College may be obtained—
1. By payment of 70 guineas on entrance.
2. By payment of 45 guineas at the commencement of the first year, and 35 guineas at the commencement of the second year.
3. By three annual instalments of 35, 30, and 20 guineas respectively, at the commencement of the sessional year.

(b) Fees for attendance on Hospital Practice—

For 3 months' Medical and Hospital Practice, 5 gs.				
" 6 "	" "	" "	" "	8 "
" 1 year "	" "	" "	" "	12 "
" perpetual "	" "	" "	" "	25 "

or by three instalments at the commencement of the sessional year—viz., first year, 12 guineas; second year, 10 guineas; third year, 6 guineas. Or by two instalments—viz., first year, 14 guineas; second year, 12 guineas.

In addition to the above fees, the Committee of the Royal Infirmary require the payment of 2 guineas yearly up to three years, from every Student attending the Infirmary for a year or part of a year. After three years of attendance such payment will be no longer necessary.

(c) Single Courses of Lectures, 5 guineas.

Fees for Lectures, &c., at College must be paid to the Secretary, and fees for Hospital Practice to the House Physician at the time of entry.

Further particulars may be obtained from Professor HOWDEN, Secretary, at the College.

UNIVERSITY COLLEGE, LIVERPOOL. SCHOOL OF PHARMACY.

A Complete Course of Instruction for the Examinations of the Pharmaceutical Society of Great Britain may now be taken in University College.

The Professors of Chemistry, Physics, Botany, and Materia Medica afford instruction in their respective subjects, and a Lecturer in Pharmacy has been appointed.

The Session will comprise a First Course, suited to the requirements of students preparing for the Minor Examination, commencing in October, 1897; and a Second Course, which will embrace the higher branches of study required by candidates for the Major qualification, beginning in May, 1898.

A Scholarship of the annual value of about £20 is tenable in this School.

Applications for admission and all inquiries must be addressed to

THE REGISTRAR, University College.

UNIVERSITY COLLEGE, BRISTOL. FACULTY OF MEDICINE.

The WINTER SESSION commences in October and the SUMMER SESSION in May.

COURSES OF LECTURES:

Medicine—Professors: E. Markham Skerritt, M.D. Lond., B.S., B.A., F.R.O.P., and J. E. Shaw, M.B., C.M. [F.R.C.S.]
Surgery.—Professors: O. A. Morton, F.R.C.S., and J. Swain, M.D., M.S. Lond., Anatomy.—Professor: Edward Fawcett, M.B., C.M. Edin.
Practical Anatomy.—Demonstrator: J. O. Symes, M.D.
Physiology.—Professor: G. Munro Smith, M.R.C.S., L.R.C.P.
Practical Physiology and Histology.—Lecturer: F. H. Edgeworth, B.A., M.B., B.C. Cantab., B.Sc. Lond.
Chemistry.—Lecturer: Professor Sydney Young, D.Sc., F.R.S.
Public Health.—Lecturer: D. S. Davies, M.D. Lond., D.P.H. Cantab., M.O.H.
Midwifery and Diseases of Women.—Professor: A. E. Aust Lawrence, M.D.
Medical Jurisprudence.—Lecturers: R. Eager, M.D. Lond., and A. J. Harrison, M.B. Lond. [M.D. Cantab., F.R.C.S.]
Pathology and Morbid Anatomy.—Professor: J. Michell Clarke, M.A.
Operative Surgery.—Lecturer: C. F. Pickering, F.R.C.S.
Practical Medicine.—Lecturer: J. E. Shaw, M.B., C.M.
Practical Surgery.—Lecturer: A. W. Frichard, M.R.C.S.
Practical Midwifery.—Lecturer: W. C. Swayne, M.D. Lond.
Materia Medica and Practical Pharmacy.—Lecturer: A. B. Prowse, M.D. Lond., F.R.C.S.
Pharmacology and Therapeutics.—Lecturer: A. B. Prowse, M.D. Lond., F.R.C.S.
Biology.—Lecturers: Professor C. Lloyd Morgan and S. H. Reynolds, M.A.
Practical Chemistry.—Lecturer: Professor Sydney Young, D.Sc., F.R.S.
Practical Bacteriology.—Lecturer: D. S. Davies, M.D. Lond., D.P.H. Cantab., M.O.H.
Comparative Anatomy.—Lecturer: Professor C. Lloyd Morgan.
Dental Anatomy and Physiology.—Lecturer: Professor G. Munro Smith, M.R.C.S., L.R.C.P.
Dental Surgery.—Lecturer: W. R. Ackland, M.R.C.S., L.D.S.
Dental Mechanics.—Lecturer: C. A. Hayman, M.D., L.R.C.P., L.R.C.S.
Dental Metallurgy.—L.D.S.
Medical Tutor.—J. J. S. Lucas, B.A., M.R.C.S.
Physiological Assistants.—J. D. C. Calcott and C. F. Walters.

Composition Fee for Lectures, 65 guineas or 55 guineas.

Special Six Months' Course for Diploma in Public Health:—

- Lectures on Public Health.—D. S. Davies, M.D. Lond., D.P.H. Cantab., M.O.H.
- Laboratory Course of Hygienic Chemistry and Bacteriology.—F. W. Stoddart, F.I.C., F.C.S.
- Demonstrations on the various Acts, Orders, By-laws, &c.—J. O. Heaven, M.R.C.S., D.P.H. Lond.
- Practical Outdoor Sanitary Work.—D. S. Davies, M.D. Lond., D.P.H., M.O.H. Fee for the entire Course, 20 guineas.

An important Medical Library exists in the College, consisting of the combined libraries of the Faculty of Medicine, the Bristol Medico-Chirurgical Society, the Bristol Royal Infirmary, and the Bristol General Hospital. Students have the privilege of using this Library.

Honorary Librarian, L. M. Griffiths, M.R.C.S.

HOSPITAL PRACTICE may be attended either at the Bristol Royal Infirmary or at the Bristol General Hospital.

FEVER HOSPITAL PRACTICE at the Hospitals for Infectious Diseases of the Sanitary Authority of the Corporation of Bristol; and LUNATIC ASYLUM DEMONSTRATIONS at the City and County Lunatic Asylum, Stapleton.

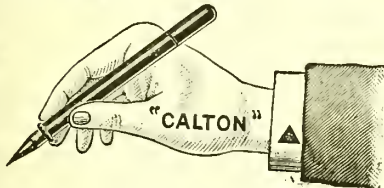
Fees (including Clinical Lectures).—Infirmary: Perpetual Medical and Surgical Practice, 20 guineas each, or in one payment, 35 guineas. Hospital: Perpetual Medical and Surgical Practice, £20 each, or in one payment, 35 guineas. Fever Hospital Practice and Lunatic Asylum Demonstrations, 3 guineas each.

Scholarships and Prizes.—Numerous valuable Scholarships and Prizes are offered by the Faculty of Medicine, and by the Infirmary and the Hospital. For Prospectuses and particulars apply to

E. MARKHAM SKERRITT, M.D., DEAN.

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Choosing a Pen everyone wants the Best—that is, they want the **"CALTON" STYLOGRAPHIC PEN.** It is the Simplest and Cheapest of its kind on the Market, and is praised all who use it. We send it Complete in Box, with Filler and Directions, at paid, for 3s. All kinds repaired.
16-ct. Gold Nib, Iridium Tipped, 5/-
Dept. C.D., JEWEL PEN COMPANY,
58 Fenchurch Street, London, E.C.

A SHORT MANUAL of ANALYTICAL CHEMISTRY

By Dr. MUTER, F.R.S.E., F.I.C., &c.

This is the laboratory companion of the Pharmaceutical Student, containing as it does everything that he requires, from the simplest to the most complex operations within a short compass. It has only to be seen to be at once adopted by every student.

LONDON: SIMPKIN, MARSHALL, HAMILTON, KENT & CO. (LIM.)
and BAILLIERE, TINDALL & COX.

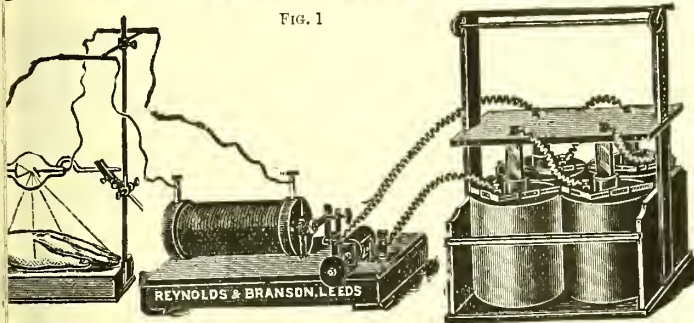
ROYAL (DICK) VETERINARY COLLEGE, EDINBURGH.

Seventy-fifth Session commences October, 1897.

For Prospectus apply to the Secretary.

SETS OF SUPERIOR APPARATUS.

Fig. 1



I.—Consisting of 2½-in. Spark Induction Coil
and 3 large Cells (10-pint size), Rapid
"X" Ray Focus Tube. Support for
Tube and Exposing Box £9 0 0

II.—With 3-in. Coil and 3 large Cells 13 0 0

III.—" 4 " 4 " " " 14 10 0

IV.—" 6 " 8 " " " 20 10 0

Extra Battery Cells, 12/6 each.

Portable Accumulators can be supplied instead of
Primary Batteries at the same price.

Cryptoscope Screen, best quality, large size, 35/-

Focus Tubes, 25/-

Test Plate for Registering the Intensity of "X" Rays on
a Photographic Plate, price 5/-

Discount to the Trade. For full particulars apply to Makers—

REYNOLDS & BRANSON, 14 Commercial Street, LEEDS, ENGLAND.

A DRUG STORE MAN'S EXPERIENCE.

HE SAYS:—

"Of other advertising, the Price List is the most popular. Hand-bills are thrown away unread, but a Price List is often kept—and perused. Properly worked, these Lists cost next to nothing, a few good advertisements, easily obtained, paying nearly or quite the whole cost."

—Vide C. & D., January 2, 1897.

HARRISON & WAIDE

The Leading Store List Publishers,

MARKSTALL ROAD, LEEDS,

Will be pleased to send Samples, Prices,
and Information on receipt of
Three Stamps.

LABELS

OF ALL KINDS,

PRESCRIPTION ENVELOPES,

POWDER ENVELOPES,

BOTTLE BOXES,

WRAPPING PAPER

AND

GENERAL PRINTING.

The Patent Serrated Pine Tree Toilet Paper.

New Sets of Rainbow and Picture Bills.

JAMES TOWNSEND,

Medical Label and General Printer,

EXETER:

Little Queen Street and
Gandy Street.

LONDON:

2 & 3, Stonecutter Street,
Farrington Road, E.C.

STOKES' CASH TILL.

Reduced Price **47/6** Latest Improvements

(Sent on Trial) seven days, on receipt of two references.

Particulars and Testimonials on application

G. R. STOKES & CO., LTD.
HANLEY, STAFFS.



BOWERS BROTHERS.

The Chemists' Effective Printers and Advertisement Designers.

Intelle Correspondence

NOVEL DESIGNS, GOOD WORK, LOW PRICES.

10,000 Handbills 17/6 9 x 5 1/2

10,000 „ 11/- 7 1/2 x 5

ALL OTHERS EQUALLY LOW.

FULL VALUE IN ALL LINER.

Send for Estimates before ordering elsewhere

THE NEW PERMANENT ENGRAVED WINDOW TABLETS

PRIZE MEDAL,
International
Health Exhibition,
1884.

IN
RUBY, BLUE, AMBER, AND
OPAL GLASS.

AWARD OF MERIT,
International
Sanitary Exhibition,
1881.

Send particulars of size, subject matter, and colour, when price for one Tablet and upwards will be sent

For Proprietary Articles, 100 8 x 6 Ruby Tablets, £3 15s. 0d.

J. R. CORSAN, THE LONDON SAND-BLAST WORKS, **58 GRAY'S INN ROAD, W.C.**
TO PREVENT FRAUD DEMAND BUSINESS CARD FROM TRAVELLERS.

Every CHEMIST, DRUGGIST, and MANUFACTURER should use

DAILLEY & WILKINSON'S PLEATED PAPER BOTTLE-CAPS.

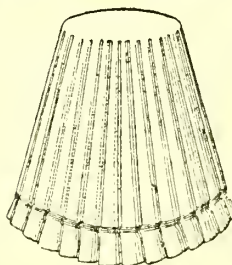
Great Reduction in Prices.

Nos. 0, 1, 2, 3, 10, 20, 30, 3B, } at 5d. per gross.
for Phials... ..

„ 4, 4B, 40 (3 to 6 oz.) ... „ 7d. „

„ 5, 5B, 50, 5 1/2 (8 to 10 oz.) „ 8d. „

„ 6, 6B, 60 (Pints) ... „ 10d. „



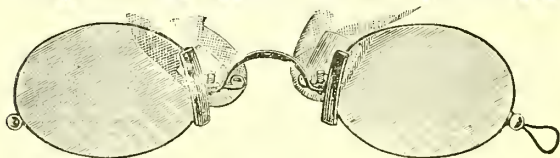
Nº 4

(Machine-made).

Quality and Colours Guaranteed.

Samples can be had on application through Wholesale Houses, or direct.

8 Great Sutton Street, E.C.



Telegrams, "ASTIGMATIC." Telephone 65299, Holborn.

J. RAPHAEL & CO.

Wholesale Manufacturing Opticians,

51 CLERKENWELL ROAD, LONDON, E.C.

We hold the Largest and most Varied Stock of Interchangeable Spectacles and Folders in this country.

BOORD & SON,
DISTILLERS, FOREIGN WINE AND SPIRIT MERCHANTS, AND METHYLATORS.
ALLHALLOWS' LANE AND BARTHOLOMEW CLOSE, LONDON, E.C.
Quotations for S.V.R. Methylated Spirit and Finish on application.
FINEST ORANGE WINE FOR QUININE.



TRADE MARK

Friedrich Feustell Nfl., Hamburg,

MANUFACTURERS OF

Essential Oils, Essences, Spirits, Tinctures, &c.

WORKS:

HAMBURG, Free Port, KI. GRASBROOK.

ADDR. FOR TELEGRAMS:

"CARVOL HAMBURG."

Recommend of their own production finest standard qualities.

Essential Oils of:

Almonds, Aniseed, Caraway Seed, Cardamoms, Cinnamon, Cloves, Coriander Seed, Fennel Seed, Ginger, Juniper Berries, Mace, Nutmeg, Patchouly, Pepper, Peppermint, Pimento, Sandal Wood, Thyme.

Specialities.

Anethol, Carvol, Citral, Eugenol, Eucalyptol, Menthol, Safrol, Thymol, Almonds (artificial), Carven, Mirbane, Thymen.

Direct Importation of:

Oils of Bay Leaves, Bergamot, Cajuput, Camphor, Cananga, Cassia, Citronella, Eucalyptus (Globulus), Geranium (French, Indian, Turkish), Lavender, Lemon, Lemongrass, Neroli, Orange, Otto of Roses, Peppermint (American, Japanese), Petit-grain, Rosemary.

Largest advantages to Buyers and for Export, the Works being situated in the Free Port, where all raw materials are employed exempt of any duties and Customs charges.

Quality of all products fully guaranteed pure and first-class only.

Price List, Special Quotations, and Samples on Application.

G. KAHLER & CO., 29 FENCHURCH ST., LONDON, E.C.

Sole Agents for

FRIEDRICH FEUSTELL NFL., HAMBURG.

SOLE AGENTS FOR THE UNITED KINGDOM.
G. KAHLER & CO., 29 Fenchurch St., LONDON, E.C.

Address for Telegrams: "ACETIMETER LONDON."

ROBINSON'S ORIGINAL CONCENTRATED WATERS.

ESTABLISHED 1855.

When diluted in the proportion of one part to forty parts of water at 60° temperature, they faithfully represent the Medicated Waters of the British Pharmacopœia. They are always of uniform strength, and will keep good any length of time in any climate.

Aqua Amygd. Amar. Conc. (U.S.)	4/- per lb.	Aqua Cassia Conc.	4/- per lb.	Aqua Menth. Virid. Conc.	4/- per lb.
" Anethi, Concent.	4/- "	" Flor. Aurant...	8/6 "	" Pimentæ "	6/- "
" Anisi "	4/- "	" Sambuci Conc...	8/6 "	" Pulegii "	6/- "
" Camphoræ "	4/- "	" Fœniculi Conc.	4/- "	" Rosmarini "	6/- "
" Carui "	4/- "	" Menth. Pip. Conc.	4/- "	" Rose "	8/6 "
" Cinnam. Ver. Conc.	6/- "	" Ang. Conc.	6/- "	" Virginæ "	10/6 "

The above may be had in ½-lb. or 1-lb. Bottles and upwards, through most of the Wholesale Drug Houses.

Each Bottle has the Inventor's Protection Label over the cork, without which none are genuine.

SUPERIOR ORANGE WINE (Vin. Aurantii, B.P.)

Samples of any of the above sent free on application from

B ROBINSON, Distiller and Brewer of British Wines, Church Street, PENDLETON, MANCHESTER



A COMPLETE APPARATUS,
CAPABLE OF PRODUCING
OVER

300 DOZ. BOTTLES

of Aerated Water per day,
at a minimum of cost,
from

£20.

SODA-WATER MACHINERY
AND ALL APPLIANCES FOR THE TRADE.
NO DANGER. NO MESS.

Write for
ILLUSTRATED
CATALOGUE,

Post Free upon Application.

BARNETT & FOSTER

NIAGARA WORKS,

26th EAGLE WHARF ROAD, LONDON, N.

9 Gold Medals. 44 Highest Awards.



MAKE YOUR OWN MINERAL WATERS.

See Pages 442 and 443, *Chemist and Druggist* Diary, 1897.

A great many Chemists, Hospitals, &c., are using this simple and most effective Plant, and producing splendid Aerated Waters.

SUPPLIED ONLY BY

THE VOLCANIC AERATION CO., 203 Great College Street, LONDON, N.W.
J. G. CHAPMAN, Proprietor.

A. MILLAR & CO., LTD., DUBLIN. PURE ORANGE WINE

(VINUM AURANTII, B.P.), prepared in strict accordance with the Formula of the British Pharmacopœia.

NATURAL MINERAL WATERS.

PACKING
FREE.

INGRAM & ROYLE LTD.

CARRIAGE
PAID.

LONDON—EAST PAUL'S WHARF, 26 UPPER THAMES ST.

HUNYADI-JÁNOS

LIVERPOOL :
19 South John
Street.

BRISTOL :
80 Redcliff St.

VICHY

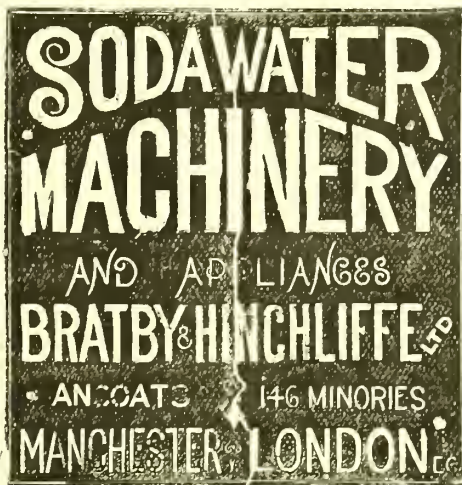
NAME	Per Dozen		Original Packages				NAME	Per Dozen		Original Packages			
	Bots.	½ Bots	Bottles	½ Bottles	½ Bottles	½ Bottles		Bots.	½ Bots	Bottles	½ Bottles	½ Bottles	½ Bottles
Eulap	15/-	12/-	25	30/-	50	50/-	Pitkeathly	—	3/6	—	—	—	—
Alinaris	6/-	5/-	50	23/-	100	36/-	Pullna	12/-	8/-	40	36/-	40	25/-
Birboule (La)	11/-	—	50	42/-	—	—	Reginaris	5/6	4/6	50	21/-	50	17/-
Gesbad	12/-	—	50	46/-	—	—	Rolsdorf	5/6	4/6	50	22/-	100	35/-
Clial	—	14/-	—	—	50	56/-	Rosbach	5/6	4/-	50	20/-	100	32/-
Corexeville	9/-	—	50	35/-	—	—	Royat	9/-	—	50	34/-	—	—
Flwick	24/-	15/-	—	—	—	—	Rubinat	15/-	8/-	25	30/-	100	60/-
Fritz-Josef	12/-	10/-	25	22/6	50	35/-	St. Galmier	6/-	4/6	50	22/-	100	34/-
Friedrichshall	13/-	10/-	25	25/-	50	40/-	St. Marco	11/-	6/6	50	42/-	100	52/-
Gelstein	5/-	4/-	50	20/-	50	15/-	Salutaris (not carriage paid)	4/-	2/6	—	—	—	—
HUNYADI-JÁNOS	12/-	10/-	25	22/6	50	35/-	Selters	6/-	4/6	50	24/-	50	17/-
Jonnis	5/6	4/-	50	20/-	100	32/-	Vals	8/6	—	50	33/-	—	—
Kienquelle	9/-	—	50	36/-	—	—	VICHY (State Springs), "Celestins," "Hôpital," "Grande-Grille," &c. ...	8/6	6/6	50	33/-	50	25/-
Leco	—	15/-	—	—	—	—							
Obbrunnen	8/6	—	50	35/-	—	—							

DISCOUNT ALLOWED ON LONDON ORDERS. DETAILED PRICE LIST & PAMPHLET ON APPLICATION.

SYPHONS SELTZOGENES



Messrs. J. BARRE JOHNSTONE & CO., 20 Loftus Street, Sydney, N.S.W.
Agents for New South Wales, Queensland, and New Zealand.
Messrs. NOYES BROS., 43 Queen Street, Melbourne, Victoria, Agents for
Victoria, South and West Australia, and Tasmania.



81 ROBERTSON STREET, GLASGOW.

PRICES

SYPHONS ... 1/6, 1/8, and 1/10 each.

SELTZOGENES.

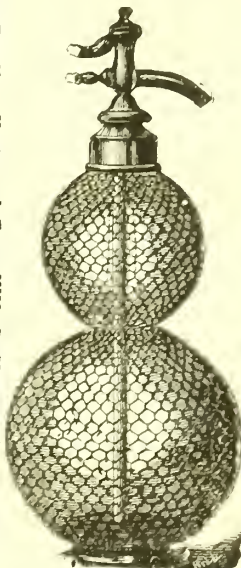
1 6/- 2 6/8 3 7/6 4 8/6 5 10/5 8 pint. 16/- each.
Including two funnels and stopper for charging.

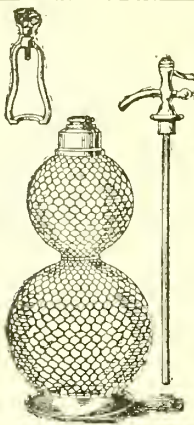
The tops of these Seltzogenes are made of pure black tin, guaranteed.

A copy of our Book of Instructions for the manufacture of Aerated Beverages will be presented to purchasers.

American Agents—For New York and East, WM. G. SMITHS, 11 Duane Street, New York.
For Chicago and West, VICTOR BAROTHY, 409 Dearborn Street, Chicago.

All our Seltzogenes are
manufactured
on the well-known
"Fevre" System, and
each
one is thoroughly
tested before leaving
the works.





ESTABLISHED HALF A CENTURY.
PRIZE MEDALS AWARDED AT ALL THE EXHIBITIONS.
SUPPORT ENGLISH MANUFACTURE.

EUGENE CÉRAUT & CO.'S LATEST NEW PATENT SELTZOGENE

The Best Seltzogene Extant & Warranted.
Wear and Working Guaranteed. No more
Screwing required. Tap cannot get corroded.

GREAT REDUCTION IN PRICE.

Patent Wire.	Cane.
3-Pint..11/-.....	12/-
5-Pint..14/9.....	15/9
8-Pint..22/6.....	25/-

Large Discounts allowed
off for quantities.

SELTZOGENES & SYPHONS.

SYPHONS.

Best English Block Tin Tops
and Ebonite Fittings, from
18/- per dozen.

HEADS of guaranteed quality.

VASES—Best Crystal and
Colours.

PRICES ON APPLICATION.

CONTRACTORS TO HER MAJESTY'S GOVERNMENT.

The Premier Manufacturers in the United Kingdom.

SOLE ADDRESS—

139 & 141 FARRINGDON RD., LONDON, E.C.



HOLY- TABLE



-ROOD WATER.

Shown by analysis to be equal to the best imported,
and is **FAR MORE ECONOMICAL.**

Highly Commended by LEADING MEDICAL AUTHORITIES

"Messrs. J. F. Macfarlan & Co. have hit upon a really excellent idea—
viz., an artificial saline table-water, similar in composition to the popular
imported natural aerated table-waters."—*Chemist and Druggist.*

J. F. MACFARLAN & CO.
Abbeyhill Chemical Works,
EDINBURGH.

SELTZOGENE CHARGES ("MINERAL" BRAND).

**A NEW DEPARTURE.
TARTARIC ACID SUPERSEDED**
(See this Journal, 19/12/96, page 880).

British Materials. Inorganic. No Field for Germ Growth
BETTER. STRONGER. CHEAPER.

**THE SELTZOGENE PATENT CHARGES CO.
ST. HELENS.**

Pure Liquefied CARBONIC ACID GAS

Prompt Delivery, any Quantity. For Prices and Particulars, apply to

THE WASHINGTON CHEMICAL CO., LIM., WASHINGTON, COUNTY DURHAM, ENGLAND.



BURROUGH'S "RED CROSS BRAND" COCA WINE.

WRITE FOR PRICES AND SAMPLES.

Dr. A. B. GRIFFITHS says, "Second to none in the market."—*Aug. 24, 1896.*

CALE STREET DISTILLERY,
CHELSEA,
LONDON, S.W.

Also S.V.R. & S.V.M.
At Lowest Prices.

PERFECTLY PURE.

WRITE FOR OUR PRICES BEFORE ORDERING.

S ⁰/₅₆ V ⁰/₆₀ R

TINCTURE SPIRIT

60 O.P. AT LOWEST PRICES. 56 O.P.

PURE ORANGE WINE.



S ⁰/₆₁ V ⁰/₆₄ M

AT LOWEST PRICES.

Special Terms to Large Buyers.

PURE GINGER WINE.

FOREIGN WINE AND SPIRIT MERCHANTS.

SOLE PROPRIETORS OF THE FAMOUS "GLENALLAN" PURE MALT WHISKY
7 YEARS OLD. THE CREAM OF SCOTCH WHISKY. Per doz. **42/-** Per doz.



Facsimile (6d. size).

B. F. MOISE, Ltd.,

MANUFACTURING PERFUMERS.

*The Largest Dealers, Exporters
and Fillers of*

ENAMELLED COLLAPSIBLE TUBES,

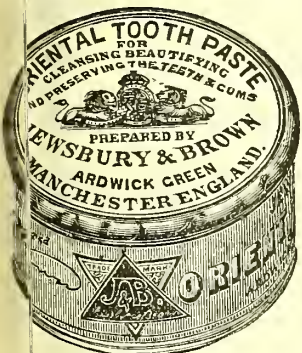
51 MILTON STREET, E.C. 51

**"All TOILET Preparations
Pharmaceutically excellent."**

This is what the *C. & D.* says of what we
manufacture and send out in this up-to-date
form.



Facsimile (6d. size).



JEWSBURY & BROWN'S Oriental Tooth Paste.

Established over 70 years. Warranted to retain its properties and keep
good in any climate. The original and only genuine is manufactured solely by

**JEWSBURY & BROWN,
ARDWICK GREEN, MANCHESTER.**

Particular attention should be paid to the Trade Mark, printed in red and green, a
facsimile of which is annexed, as numerous imitations are offered.

MAY BE OBTAINED FROM THE WHOLESALE HOUSES.

Bills and Showcards forwarded on receipt of Address Cards and directions for enclosure.

TRY IT IN YOUR BATH.

SCRUBB'S CLOUDY FLUID AMMONIA

MARVELLOUS PREPARATION.

Refreshing as a Turkish Bath.
Splendid Cleansing Preparation for the Hair.
Allays the Irritation caused by Mosquito Bites.
Restores the Colour to Carpets.
Of all Chemists, Etc.

Invaluable for Toilet Purposes.
Removes Stains and Grease Spots from Clothing.
Invigorating in Hot Climates.
Cleans Plate and Jewellery.
Price 1s. per Bottle.

SCRUBB & CO., 32b SOUTHWARK STREET, LONDON, S.E.

Arsenical Soap.

Jameson's.

The Proprietor of the above preparation calls the attention of the Chemists of the United Kingdom to the decision given at Brentford, on Saturday, 12th December, 1896, in which it was held that the presence of Arsenic, even the minutest quantity, was sufficient to exempt dealers from prosecution under the Food and Drugs' Act.


In the manufacture of Jameson's Arsenical Complexion Soap the machinery is so perfect that not only is Arsenic to be found in each tablet, but severe testing has shown that the percentage is also uniform, and consequently each and every tablet may be sold with the utmost assurance; and in order to make the trade feel as confident as does the Proprietor, he takes this opportunity of informing them that he will in every instance defend them and indemnify them should action (which after the judgment quoted is not very likely) be taken against them; and, further, he is prepared to give them a warranty with each delivery of the Soap, which the trade has only to show to the authorities to immediately quash the indictment.

It is not for the Proprietor of Jameson's Arsenical Complexion Soap to instruct the trade as to the manner in which it shall conduct its business, but he takes this opportunity of declaring that he will, after this notice, defend any Chemist against prosecution under the Pharmacy Act, provided he has himself fulfilled the statutory obligations.

Please note that holders of Jameson's Arsenical Complexion Soap are requested to send a Post Card notifying the same, and a warranty, which, as before stated, is a certain protection against prosecution, will, with a supply of labels for complying with the Pharmacy Act, be forwarded per return.

W. JAMESON, 92 Newington Butts, London, S.E.

WOODS' ARECA NUT
TOOTH PASTE
6^d & 1/5^s PER POT



Sold EVERYWHERE.

Removes Tartar, Whitens the Teeth, Sweetens the Breath, and Checks Decay.

Largest
Sale in the World.
Hundreds
of Testimonials.
Have no Substitute.

Also in Collapsible
Tubes, 1s. each.

WOODS,
PLYMOUTH.

L. BRAGER, 356 CITY ROAD, E.C., LONDON

Sole Agent for Kahnmann & Krause, Vienna.

CACHETS "KAHNEMANN"

CLOSING APPARATUS "KAHNEMANN"

TO PRESS CACHETS.

Plain White Cachets (all sizes) at 2/3 per 1,000
" Coloured " " " " " at 2/6 per 1,000
Cachets "Kahnemann" are high in quality, low in price, pure, harmless,
and always remain elastic.

Closing Apparatus "Kahnemann" at 4/6, &c.

Mr. Brager will send an Apparatus for inspection if desired.

SALVO PETROLIA

A SUPERIOR VASELINE.

May be procured through all Chemists and Druggists, and
Manufactured solely by the Proprietors,

THE DEE OIL COMPANY
LIMITED,

Works: SALTNEY, CHESTER.

SALVO PETROLIA

Sanctioned by the Board of Trade Marine Department, and included in their Instructions issued May, 1894, to superintendents of Mercantile Marine Offices.

Manufactured in five distinct qualities—WHITE, LEMON, YELLOW, GOLD, and RED (Veterinary).
Packed in tins 1, 2, 4, 5, 7, 10, 14, and 28 lbs., 56 and 112 lb. Drums, and 3 cwt. Barrels.

OLEUM DEELINÆ

(REGISTERED).

GENERALLY ADOPTED BY THE MEDICAL PROFESSION FOR
Ophthalmia, Scurvy, Ringworm, Eczema
and all Skin Diseases.

Packed in Cases—One dozen 1s. Bottles; One dozen 2s. Bottles. Plus Bottles 4s. 6d. each, for Hospitals and Dispensing Chemists. Testimonials may be had upon application.

SHADEINE.

For Colouring the Hair Sold in 6 tints, one liquid.

8d. Sample size 4/- per doz.
3/8 Large " " " " 22/- "
10/6 Extra " " " " 84/- "



SAMPLES Supplied to the Trade
on pretty hanging Showcards at
4/- per doz.

This Popular Article is Largely Advertised and kept at all Wholesale Houses.

Agents Wanted.

ALEXANDRE, 30 WESTBOURNE GROVE, LONDON

"No. 54 ALTERMARKT"

(ORIGINAL HAUS)

EAU DE COLOGNE

SUPERIOR TO ANY OTHER BRAND.

Of all Wholesale Houses, and the Sole Agents for United Kingdom and the Colonies—

VAN OPPEN & CO.

HACKNEY, LONDON, N.E.

UNRIVALLED 'OVALINE' UNRIVALLED

UNDER THE P.A.T.A.

THE ONLY SOAP CONTAINING YOLK of EGG.

Advertised Price—		A Profit of } 33% }	A Profit of	Advertised Price—	
4	per Tablet.			1s.	per Box.
6	"			1s. 6d.	"
8	"			2s.	"

NOW READY! A fine Portrait of Her Majesty the Queen, printed in 15 colours, will be forwarded, carriage paid, on application to

PACOCK'S OVALINE SOAP CO., LTD., 145 QUEEN VICTORIA STREET, E.C.

Telegraphic Address—"OVORUM LONDON."

GARANTEED TO CONTAIN ARSENIC.



CARMICHAEL'S GENUINE AMERICAN MANICURE PREPARATIONS

A FULL 6d. LINE of the original American Manicure preparations at 48/- per gross.

VIOLET AMULETS at 48/- per gross.

"LUXURIA" Bath Tablets, 14/- per dozen boxes (of 12 each). Softens and perfumes the water, exhilarates the circulation, and renders the bath refreshing.

CACHOU DE LUXE, 18/- gross of 3d. packets. Perfumes the breath does not upset digestion.

These last two appear on cardboard, as seen in black and white sketch in Summer Issue, forming a superb and attractive showcard in 16 colours. Given away with a purchase of a dozen boxes of Bath Tablets or 4/- gross Cachou de Luxe. [2]

FROM ALL WHOLESALE AND EXPORTING HOUSES

BRECKNELL'S PRIZE MEDAL.

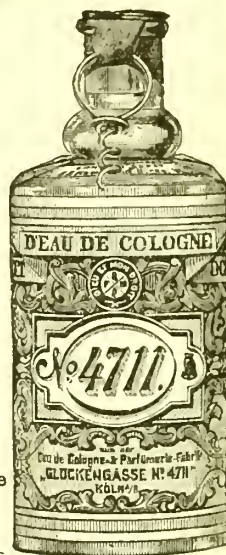
Recommended by Eminent Medical Men. **SKIN** Unscented, yet Sweet as a Rose. **SOAP.**

Although low in price, it ranks with high-class soaps, and is altogether the best extant for producing a Clear and Healthy Skin.

The longer it is kept the more it improves and increases in value. LIBERAL TERMS TO THE TRADE.

BRECKNELL, TURNER & SONS, LIMITED.
To Her Majesty, &c., &c.
31 HAYMARKET, LONDON.
ESTABLISHED 1862.

The Two Most Fashionable Perfumes.

MÜLHENS'
RHINE VIOLETSCOMMANDS
A
QUICK SALE.3/6, 3/6, 5/6,
9/6, 20/-
per bottle.Rhine Violet
Sachets,
2/6 each.Rhine Violet
Soap,
2/6 per tablet,
or 7/- per box
of tablets.LEAVES A
GOOD
PROFIT.STOCKED BY ALL THE LEADING
WHOLESALE HOUSES.Wholesale and Export Houses are
requested to communicate direct
with the Sole Agent.MÜLHENS'
EAU DE COLOGNESTRONGEST
AND MOST
LASTING.COMMANDS A
HIGHER
RETAIL PRICE
THAN ANY
OTHER.SOLD IN ALL
THE
USUAL SIZES.

R. J. REUTER, 62 NEW BOND ST., LONDON, W.

Telegrams—"REFRESHING LONDON."

TOILET SOAPS

"PEERLESS ERASMIC."—Retail, 4d. per tablet.
1 gross, 3/4½ per dozen. 5 gross, 3/4 per dozen.
Subject to a special discount of 15%.**"ERASMIC HERB."**—Retail, 3d. per tablet. 1 gross
2/4½ per dozen. 5 gross, 2/4 per dozen.

Cash Discounts—7 days, 5% ; one month, 3¼% ; two months, 2½%.

GLYCERINE. Double Distilled, 1260 Sp. Gr. Absolutely Pure

2-oz. Bottles, Retail 3d. ... 24/- per gross. In Card Boxes, | 8-oz. Bottles, Retail 10d. ... 72/- per gross. In Card Boxes
4-oz. " " 5½d. ... 42/- | 16-oz. " " 1/6 ... 126/- " In Cases.

Also in Winchester Quart Bottles, and 28-lb. and 56-lb. Tins. Prices on application.

Cash Discounts—7 days, 5% ; one month, 3¼% ; two months, 2½%.

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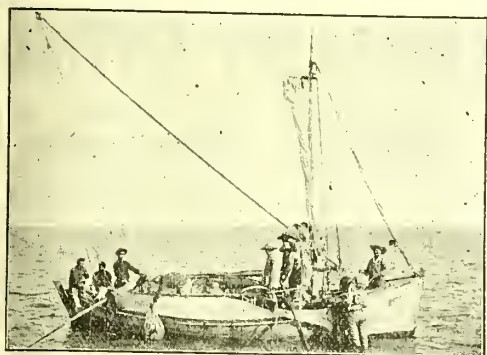
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BROTHERS**

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SPONGE

HEAD-QUARTERS,

Far the Largest Stock in the world. We fish, collect and import all descriptions direct, independently of middlemen, hence can supply at prices below any others.
OFFER EVERY GENUINE FACILITY TO BUYERS. DO NOT BE MISLED BY SPECIOUS OFFERS OF GOODS ON APPARENTLY FAVOURABLE TERMS. OUR VALUE IS UNEQUALLED AND OUR QUALITY UNSURPASSED.



Sponge Diving Boat belonging to Cresswell Brothers & Schmitz, showing Deep-sea Diver rising to the surface.



Cresswell Brothers & Schmitz's Steamer "Lady Downshire" leaving for Sponge Fishing Grounds with their Mediterranean Staff on board.

SELECT SPONGES FOR CHEMISTS' TRADE.

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FINE FLORIDA SPONGES.

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Genuine unbleached goods as imported.

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1 3/4, 1 3/8, 1 1/4, 1 1/8, 1 1/2, 1 1/4, 2 1/4, 2 3/8,	2 3/8,
2 3/4, 3 1/4, 3 3/8, 3 1/2, 4 1/4, 4 3/8, 5 1/4, 6 1/4,	7 1/8
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In 1st, 2nd, and 3rd qualities.

Our NEW PRICE LIST with full details sent on application.

PACKED ASSORTED CASES TO CONTAIN BUYERS' OWN REQUIREMENTS.

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At per string or dozen.

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Fresh line, mounted on handsome blue card of new design.

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Toilet, 2 1/2, 1 " " ..	12/-	" 2 3/8, 1 " " ..	180/-
3 1/4, 1 " " ..	18/-	" 3 1/2, 1 " " ..	18/- doz.
" 4 1/4, 1 " " ..	24/-	Bath, 3 3/8, 1 " " ..	21/-
" 6 1/4, 1 " " ..	36/-	" 4 1/4, 1 " " ..	24/-
" 1 1/2, 1 " " ..	72/-		

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Pulverised. For Dancing Floors. Is not white. Will not ball on the feet.
Will not soil clothes. All ready. Anybody can apply it.

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One pound is sufficient for a floor space of 10,000 square feet, and if not wasted will be found to go four times as far as anything else on the market.
No dust is another feature in its favour.

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Grand Value.

TOBACCO

As manufactured
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Habaneros.



The fine
Cigars at
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Price per 100

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Manufacture Glue from Skins and Bones, Liquid and in Cakes (so-called
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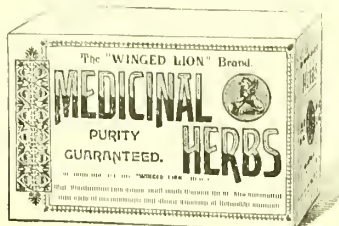
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URDOCK HERB
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AMOMILE HERB
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VERVAIN HERB
WOOD SAGE HERB
WILD CARROT HERB
WOOD BETONY HERB
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THE "LION" FEMALE CORRECTIVE HERBS cure Amenorrhœa and Dysmenorrhœa, and improve and build up the Female Constitution.

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Our Combination is one of the best obtainable for all kinds of cage birds.*

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Chemists' Sundriesmen,

SURGICAL INSTRUMENT MAKERS,

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Suppliers of Medicated Lozenges and Patent Medicines,

PROPRIETORS OF

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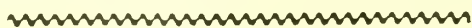
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IRISH SUPPLEMENT TO THE CHEMIST AND DRUGGIST

No. 9.

SATURDAY, SEPTEMBER 4, 1897.

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Why Don't You?

THIS question is addressed to the pharmaceutical chemists, chemists and druggists, and registered druggists who do not already subscribe to THE CHEMIST AND DRUGGIST.

We should be glad if you would send us a reply by post-card. We are sending this Supplement to you free, and think we may look for that little piece of courtesy in return.

If you have a business in drugs which is worth carrying on, it is worth your while to get THE CHEMIST AND DRUGGIST. For

TEN SHILLINGS A YEAR .

you can get a weekly journal giving you the latest and fullest and most reliable news of the trade, the most authoritative drug-market report published, the best details of novelties in pharmacy, formulæ which cannot fail to be useful to you in your business, and scores of items of information which you ought to be able to turn to account. Besides all this you will get, as soon as published, a valuable diary for next year crammed with contents of especial value to you in your business.

Why, then, do you not subscribe? Probably because you have not done so before, and you have not mustered up the energy to get a postal-order for 10s. to send to us. Try us for one year. Send the postal-order at once, and your subscription will commence from the first issue in September, and you will have paid up to the last issue in August, 1898. You will also get the DIARY for 1898 when published.

Among the items published in August the following may be mentioned:—

The Government Sale of Food and Drugs Bill.
Comments on it.
Formula for a substitute for the dangerous petroleum hair-wash.

Notes on the cod-liver oil market.
Pharmaceutical examinations in the Australasian colonies.
The Belfast Coroner—prescribing by chemists.
Table of specific gravities of B.P. liquids.
Special details of the markets for essential oils, rhubarb, opium, cinchona, and other drugs.

Photographic notes.
Dispensing in doctors' surgeries by unqualified men.
Full report of the August meeting of the Council of the Pharmaceutical Society of Ireland. (Lively proceedings.)

A complete report of the papers read at the meeting of the British Pharmaceutical Conference at Glasgow, of the discussions following them, and of the proceedings generally, including the accepted invitation to Belfast next year. Freely illustrated. Also a full-page reproduction of the photograph of the members of the Conference.

A full report of the eighth International Pharmaceutical Congress, held at Brussels, with portraits of many of the distinguished pharmacists who took part in it.

Japanese Customs tariff.
Text of the new Pharmacy Act in Jersey.
New Pharmacy Act in New South Wales.
Legal.—High Court and County Court cases, giving points of law from all over the United Kingdom.

Mr. O'Neill (Maghera) gives reasons for not subscribing to the Pharmaceutical Society.

Report of the P.A.T.A. dinner, with portraits of some of the speakers.

Notes on novelties.

FORMULÆ FOR

waterproof marine glue, dentifrice-water, pyro-ammonia developer, unfermented ginger-wine, soluble essence of lemon, wheat-dressings, hair-dyes, lanoline cream, nursery hair-oil, salol dentifrice, tasteless bird-pepper, all-round cough-mixture, rheumatism-cure, carboy colours, metal-polish, cheap hair-wash, fly and maggot lotion for sheep, cramp-mixture, shaving-paste, cucumber-pomade, black-hat lacquer, marrow-pomade, gonorrhoea-injection, syrup of tamarinds, &c. Also a selection of useful German formulæ.

These are only a few items out of many in the four August numbers of THE CHEMIST AND DRUGGIST. They are only mentioned to show how varied and how useful are the contents of THE CHEMIST AND DRUGGIST. Once more we ask—

WHY DON'T YOU SUBSCRIBE?

IRISH POOR-LAW DRUG-CONTRACTS.

WE have noticed with much satisfaction the marked effect which has resulted from an article on "Irish Poor-law Union Drug-contracts," which we published on February 27 of this year. All over Ireland Boards of Guardians have been influenced, directly or indirectly, by that publication. The Local Government Board has watched these contracts much more closely than before, and contractors have in many cases considerably modified their methods. No one of the many startling statements made in that article, which was written by an authority with full knowledge of the subject he handled, has ever been even challenged. It was shown that the art of tendering had been cultivated to such a pitch that it was possible to quote sulphate of quinine 4d. per oz., cod-liver oil 6d. per gallon, and pill-masses 4d. per lb., and yet to make a substantial profit on the whole transaction. The editor of the *Medical Press and Circular*, who is a Dublin physician, and who is thoroughly acquainted with the corruption prevalent in the Irish drug-contract system, endorsed our statements with the most thoroughgoing approval. Confirmatory facts were added by many correspondents, and they came out in discussions at meetings of guardians. One of the South Dublin Guardians explicitly stated that his eyes had been opened by what he had read in THE CHEMIST AND DRUGGIST. One writer familiar with the subject gave us a glimpse of how the account is squared by quoting the following samples of prices for drugs not contracted for:—Blaud's pills, 4s. per gross; salol, 1 oz., 4s. 6d.; conf. sennæ, 5s. 6d. per lb.; liq. morphinæ, 10s. per pint; and syr. zingib., 1s. 6d. per lb. One notable effect of the recent discussion on the subject of drug-contracts has been apparently to dispose some guardians to accept, not the lowest, but the highest, tenders, especially if these are sent in by local men. There is a certain amount of reason in preferring a local contractor, but the disposition to pay the highest price may easily be carried too far. Within reasonable limits, however, it appears to be a healthy sign.

We reported a fortnight since the discussion at the meeting of the Enniscorthy Guardians, when, after having heard a statement from the clerk, who had analysed the tenders, and from the medical officers, who showed how unsatisfactory it was to accept a tender in which some articles are quoted at half or a quarter the cost, it was resolved to accept the highest tender, which was that of a local chemist, Mr. Weston Roberts. Mr. Roberts himself, the chemist who got the contract, has since written to the local press on the subject. He points out that even the laborious investigations made by the clerk cannot assure a reliable conclusion. The method he adopted was to get from the doctors and from the invoices of last year a list of the articles used to the extent of from about 3s. or 5s. and upwards, and then to add up the prices quoted for these in the various tenders. This system, of course, opens the way to the abuses already complained of. Mr. Roberts points out that the only way of satisfactorily solving the question of the cheapest tender is to note the exact quantities of each of the 420 items used during the preceding three years, and price out the tenders accordingly. Three years are named, because one year might have some epidemic that would cause a much larger quantity of some medicines to be used, and so falsify the calculation. This course would involve an amount of work which could only be undertaken apparently by a central body, and some such solution of the problem as this seems to be the only really effective one.

While, therefore, there is a tendency towards improvement, the risk, or we might say the certainty, of corruption remains, unless some definite means of control are adopted. Dr. A. H. Jacob, of Dublin, than whom no one is more qualified

to form a sound opinion on this subject, wrote us a letter which was published in our issue of May 8 last, in which he recommended as a remedy for the prevalent evil the appointment of a central drug expert, whose duty it should be (we understand) to advise on tenders, and to examine samples brought to him by his inspectors; the appointment of, say, four peripatetic inspectors to call unexpectedly at workhouses and take samples of medicines; and the authorisation of the prosecution by the Local Government Board of contractors who should supply inferior drugs. Dr. Jacob estimated that such a staff need not cost more than 1,500l. a year, and that sum might be reduced, we should think, by reducing the travelling inspectorships to one or two. It is much to be hoped that the present agitation will not die away without producing some permanent good result.

THE B.P.C.

THE drug-trade of Ireland has now a special interest in the British Pharmaceutical Conference, for at the meeting in Glasgow on August 11 it was unanimously agreed to hold the next meeting in Belfast in 1898. The Conference is the one link which joins together the pharmacists of England, Ireland, Scotland, and Wales. It has no politics, no laws to enforce, nothing but the general good of practical pharmacy to foster, and happy relations between man and man to promote. The Conference happens to have a letter-box at 17 Bloomsbury Square, W.C., and it recognises the pharmaceutical societies of Great Britain and Ireland by appointing their Presidents for the time being Vice-Presidents of the Conference; but there the official connection ends, and the members of the B.P.C., whether they are members of the societies or not, are exceedingly jealous of the Conference's independence. This spirit is growing, and to it we attribute in a measure the increasing interest in its proceedings. The attendance at the Glasgow meeting was a record, no fewer than 450 joined in some of the arrangements—needless to say, they were social, not scientific, proceedings. A larger number of Irishmen than usual were present, including Mr. W. F. Wells, jun., Pres. P.S.I., Mr. G. D. Beggs, Treasurer (who carried away some curious snap-shots from the Clyde), Mr. Conyngham, Mr. Patrick Kelly, Mr. Samuel Gibson, Dr. McWalter, and Mr. McKnight. The unfortunate illness of Mr. J. C. C. Payne prevented him going to Glasgow to repeat the invitation which he gave at Liverpool last year, and Sir James Haslett was detained elsewhere by official business; so Mr. McKnight had to interrupt his honeymoon to speak a word on behalf of the pharmaceutical chemists of Ulster, Mr. Gibson spoke for the druggists, and Mr. Wells blessed them both, urging the acceptance with the curious explanation that he is a Belfast man himself—at least his better half comes from that quarter. The speeches were honest and hearty, created much enthusiasm, and the meeting quickly accepted the invitation Mr. McKnight being appointed the local secretary. Dr. Charles Symes, of Liverpool, was reappointed President. When the meeting will be held has yet to be determined, but the middle of August is the time which suits most people and then doubtless it will be. The meetings, we may explain, open on a Monday evening with a reception, on Tuesday and Wednesday from 10 to 1 and 2 to 4 business and scientific meetings are held, and the local committee dovetail as much sociality into the days as they can. Thursday is given up to an excursion. Belfast men promise visits to factories, and this has given much satisfaction to those who can remember the pleasure and profit of such visits. We trust that the meeting will be successful, and may add for the benefit of Irishmen that success always attends united and vigorous local effort.

News of the Month.

Carbolic Acid must not be sold by any but qualified persons, and the Irish Privy Council have published a warning to that effect.

Self-st Aerated Waters are still on the up grade, 3,400 to having been exported for the quarter ending July, as compared with 3,078 last year. A B.P.C. visit to the principal works would be a good feature.

Dividends.—The directors of Messrs. Henry Williams & Co. (Limited), who carry on a drug and general store business in Dublin, have declared a dividend at the rate of 6 per cent. per annum.

The directors of W. & H. M. Goulding & Co. (Limited), chemical-manufacturers, Dublin, have declared dividends at the rate of 7 per cent. on the ordinary shares and 5½ per cent. on the preference shares, besides paying 4½ per cent. on the debenture stock. The sum of 1,552½ is carried forward.

Examination for a vacancy in the Naval Hospitals Dispensing Service will be held this month. The list closed on August 25. We mention this because it is the first time the L.P.S.I.'s have been allowed to enter for vacancies in this service.

Bankruptcy of Dr. Hickey, Parliament Street, Dublin, has been inquired into. His business has been sold to Mr. Allen, L.P.S.I., Capel Street, and the point before the Court was that Mr. Allen had the trading books, and the inquiry could not go on without them. An order has been made for the production.

Charles Cameron and Mr. Douglas Cameron of Dublin, are analysts for Limerick, at a salary of 50*l.* a year. A solution has been presented to the grand jury of the county to cancel the appointment, as it is difficult to bring Sir Charles to remote parts of the county at short notice. Sir Charles wishes to hold on to the job till he dies.

The Pharmaceutical Chemists' and Apothecaries' Assistants' Association of Ireland intends to shorten its annual meeting when the Winter Session opens. We are glad to hear it, it is also the intention to start an employment register, for the purpose of providing situations for members and acting as a supply agency for employers requiring assistants. The opening meeting will be on October 8.

The Creditors of Mr. J. Boyle, chemist, Londonderry, have promptly accepted a composition of 4*s.* in the pound. Mr. Boyle's liabilities were 469*l.*, and net assets 116*l.* 10*s.* The principal creditors are:—Apothecaries' Hall, Dublin, 10*l.*; Ayton & Saunders, Liverpool, 19*l.*; Boyle, B., Londonderry, 80*l.*; Boyle, C., Londonderry, 120*l.*; Breidenbach & Co., London, 6*l.*; Doherty & Boyle, Londonderry, 10*l.*; Evans, Sorrell & Co., Liverpool, 41*l.*; Hopkinson & Co., London, 19*l.*; Hurst & Co., Dublin, 114*l.*; Kerfoot, T. & Co., Manchester, 10*l.*; Lorimer & Co., London, 6*l.*

Montgomery & Pratt, York Street, Belfast, sold white pepper, on the labels of which was the figure of a lion and the word "trade-mark." The white pepper was put up by White, Croxey & Co., who have recently taken legal proceedings against the makers of the "Royal" baking-powder for stating that the title of that powder was a registered trademark (which it is in the U.S.A.). The baking-powder people made the Belfast firm nominal defendants in a trade-mark action, it being said that the lion was a trade-mark which did not exist. The Belfast Magistrate fined Messrs. Montgomery & Pratt 40*s.*, and 20*s.* costs.

The Inconvenience of not being a Chemist.—The Local Government Board has written to the Cork Board of Guardians in connection with the proposal to pay 2*l.* 2*s.* a week to a substitute for the resident apothecary in conse-

quence of the absence of the latter, and the inability of both the acting medical officers to compound medicines, neither being a chemist. The Local Government Board refers the Guardians to their own arrangements, in which the duty of making up the medicines was entrusted recently to the medical officers, and state they see no reason why the additional expense should be imposed on the ratepayers.

A New Medical-hall is to be opened in Kells by the Kells Medical Hall Company (Limited). The managing director is Patrick Smith, who describes himself as a contractor. He and Mary E. Smith, "married woman" (probably Patrick's wife), hold 193 out of the 200 shares of the company. Another married woman and a spinster, a grocer, a decorator, and a clerk make up the precious company. The establishment is to be "under the superintendence of a fully-qualified pharmaceutical chemist of high standing and extended experience," and is to be "furnished with an ample and up-to-date stock." Verily 200*l.* goes a long way in Kells.

Kells Medical Hall Company (Limited).—Registered August 12, 1897 (in Ireland). Nominal capital 200*l.*, in 200 shares of 1*l.* each. Names and description of subscribers to Memorandum of Association, with number of shares subscribed for:—Patrick Smith, Kells, contractor, 93 shares; Mary E. Smith, Kells, married woman, 100 shares; John Smith, Kells, grocer, 1 share; Mary Elizabeth Smith, Kells, married woman, 1 share; James Sweeney, Kells, decorator, 1 share; Maggie Sweeney, Kells, spinster, 1 share; Thomas Joseph Tracy, 10 Innisfallen Parade, Dublin, clerk, 1 share. Registered office: Kells, co. Mcath. Registered without articles of association.

The Prescription-book is rightly regarded by chemists as valuable property, and rarely are chemists called upon to produce such books in public courts. A case of the kind has happened at Peter's Hill since our last issue. It was found that a man who had cut his throat had been taking some medicine supplied by Mr. James Thompson, chemist there, and the Coroner called upon Mr. Thompson to produce his prescription-book, apparently with the object of seeing what the medicine was composed of. Mr. Thompson's solicitor refused to produce the book, pointing out that it would be a breach of confidence to the people whose prescriptions were in it. The Coroner said he had power to insist on its production, but waived it on being assured that there was no prescription for the suicide in it. He then reprimanded Mr. Thompson for prescribing.

The August Council Meeting of the Pharmaceutical Society of Ireland was a rather lively one. First, Mr. McKnight was co-opted a member of the Council in place of Mr. M. R. Whitla resigned. But Mr. Bernard, who was one of three who voted for Mr. T. W. Robinson, said the co-optation had been conducted in a hole-and-corner way. He meant behind the backs of the Council. Then there was a long and excited discussion respecting the resignation of the Vice-President (Mr. R. J. Downes). In his letter to the President Mr. Downes related the circumstances which had led to his resignation. He complained that on the occasion when he had taken the chair he had been "persistently obstructed" by Councillor Bernard. The accused councillor warmly resented this version of the case, and narrated the story from his own point of view. Ultimately it was agreed to ask Mr. Downes to reconsider his resignation. Mr. Bernard subsequently moved that the report of the Council's July meeting should be published in full, but the President refused to put the motion. Mr. Simpson reproached the President with taking up too much time with his own speaking, and Mr. Ryan said he thought Mr. Simpson showed great want of respect to the chair.

The Illinois Pharmaceutical Association wishes to see in the U.S.P. articles having a definite composition that are patented or trade-marked, under a proper scientific name, the trade-name as the synonym. They would recommend for recognition the following:—Antipyrin, aristol, ichthyol, iodol, papain or papoid, phenacetin, saccharin, and sulfonal (that is how they spell sulphonal).

Preliminary Examination.

THE following are questions given at the examination held on Monday, July 5:—

ENGLISH GRAMMAR.

DR. H. C. TWEEDY.

1. What are the parts of which a simple sentence is composed? Give illustrations.
2. Write out the passive voice of the verb *to bring*.
3. Mention three nouns with double plural forms; also six nouns which have no singular.
4. What is meant by apposition? How may the case of a noun in apposition be known?
5. Explain the words *Relative* and *Antecedent*.

COMPOSITION.

Write a short essay on *one* of the following subjects:—

- (a) The Queen's Diamond Jubilee.
- (b) A Cricket Match.
- (c) Cowardice.

LATIN.

DR. H. C. TWEEDY.

1. Translate *one* of the following passages:—

I.

Quod *genus* hoc hominum? quaeve hunc tam barbara morem Permittit patria? hospitio prohibemur harenae; Bella *ei*ent, primaque vetant consistere terra. Si genus humanum et mortalia *temnitis* arma, At sperate deos memores fandi atque *nefandi*. Rex erat Aeneas nobis, quo iustior alter Nec pietate fuit nec bello maior et armis; Quem si fata virum servant, si *vescitur* aura Aetheria neque adhuc crudelibus occubat umbris, Non *metus*. Officio nec te *certasse* priorem Paeniteat: sunt et Siculis regionibus urbes Armaque, Troianoque a sanguine clarus Acestes.

II.

Quo proelio *sublati* Helvetii, quod *quingentis* equitibus tantam multitudinem equitum propulerunt, *audacius* subsistere, nonnumquam et novissimo agmine proelio nostros *lacerare coeperunt*. Caesar suos a proelio continebat, ac satis habebat in praesentia hostem rapinis (pabulationibus) populationibusque prohibere. Ita dies circiter *quindecim* iter fecerunt, *uti* inter novissimum hostium agmen et nostrum primum non amplius *quinis* aut senis millibus passuum interesset.

1. Parse all words in *italics* in the passage you select for translation.

2. Give the nominative plural of the following:—

Pecus, lacus, pelagus, latus, nimbus, palus.

3. What is meant by the terms—accusative of exact definition, and accusative of cognate signification, respectively? Give illustrations of each.

ARITHMETIC—WEIGHTS AND MEASURES.

SPARKHALL BROWN, B.A. (LOND.).

1. Simplify $(\frac{2}{3} \text{ of } 1\frac{2}{3}) \div \frac{2}{3}$, and find the value of this fraction of four guineas.
2. Multiply '003125 by '48, and divide the result by '0000125.
3. If the income-tax be 5*d.* in the pound, what will have to be paid on an income of 980*l.* 10*s.*?
4. Find the value of 8 oz. 12 dwts. 18 gr. of gold, at 3*l.* 18*s.* 4*d.* per oz.
5. Reduce 532 kilometres to miles, furlongs, and poles.
6. Into how many pills of 325 milligrammes each can a mass of 234 grammes be made?

ALGEBRA.

SPARKHALL BROWN, B.A. (LOND.).

1. Multiply $3a^2 + 4ab + b^2$ by $4a^2 + ab + 8b^2$.
2. Subtract $\frac{5}{2x-1} + \frac{2x-7}{4x^2-1}$ from $\frac{3}{x}$.
3. Reduce $\frac{a^2+3a+2}{a^2+6a+5}$ to its lowest terms.
4. What is the G.C.M. of $27a^2b^2c^4d$ and $63a^5bc^5d^2$?
5. Solve $\frac{1}{2}(8-x) + 2x - 3\frac{1}{2} = x + 6 - \frac{2x}{3}$.

EUCLID.

SPARKHALL BROWN, B.A. (LOND.).

1. What is an axiom? Give any two of Euclid's axioms. [Not more than two of the following propositions to be attempted.]

2. The angles at the base of an isosceles triangle are equal to one another and if the equal sides be produced, the angles of the other side of the base shall be equal to one another.

3. If two triangles have two sides of the one equal to two sides of the other, each to each, but the angle contained by those sides of one of them greater than the angle contained by those sides equal to them of the other, the base of that which has the greater angle shall be greater than the base of the other.

4. If a straight line falling on two other straight lines make the alternate angles equal to one another, the two straight lines shall be parallel to one another.

CHEMISTRY.

SPARKHALL BROWN, B.A. (LOND.).

1. How is oxygen prepared? What tests would you apply to this gas?
2. Describe an experiment by which the composition of water can be demonstrated.
3. What is an acid? Name some common acids and alkalis, giving the formula of each.
4. Name the oxides of nitrogen, and describe one of them referring to mode of preparation.
5. Give an account of chlorine gas. Explain its bleaching action.

Marriages.

No charge is made for inserting properly authenticated announcements in this section of THE CHEMIST AND DRUGGIST and the Irish Supplement.

McKNIGHT—BROWN.—On August 9, at Windsor Presbyterian Church, by the Rev. H. Woods, M.A., Robert T. McKnight, M.P.S.I., and member of the Council of the P.S.I., third son of the late Robert Warren McKnight, Arva, co. Cavan, to Mary Elizabeth (Minnie), youngest daughter of the late David Brown, Kensington, Windsor Avenue, Belfast.

MIDDLETON-TAYLOR—ELLINGTON.—On August 11, at St. Luke's Church, Cork, by the Rev. S. H. Ponsors, Harman Hylton Middleton-Taylor, only son of William Hy Taylor, chemist, Middleborough, to Eleanor Mary Ellington, only daughter of C. T. Ellington, Esq., R.N.R., Collector of H.M. Customs, Cork.

Personal Paragraphs.

Mr. Charles Cooper, apothecary to the Bandon Union, has been superannuated with half-pay.

Sir Henry Cochrane, chemist, Dublin, has been appointed chairman of the Bray committee, co. Wicklow.

Mr. Kilpatrick, apothecary to the Castlereagh Dispensary, has been granted an increase of salary from 80*l.* to 100*l.* year.

Mr. C. Tynan, L.P.S.I., late of Messrs. Doran's Medical Hall, Quinsborough Road, Bray, is opening a new pharmacy at Carlow.

Mr. David Hadden, eldest son of Dr. Hadden, proprietor of the Medical Hall, Wexford, has been awarded the Wheat Gold Medal of the City of Dublin Hospital.

Professor Tichborne and Dr. McWalter were the representatives of Ireland at the eighth International Pharmaceutical Congress, held at Brussels from August 14 to August 19.

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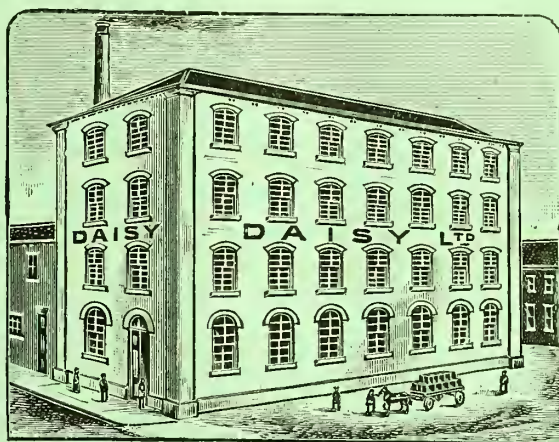
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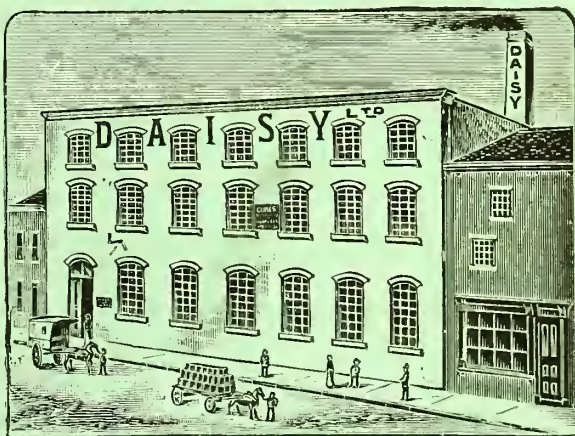
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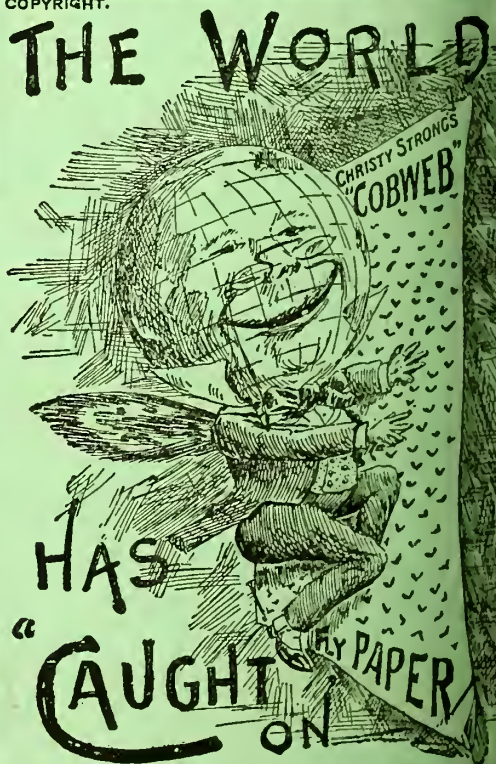
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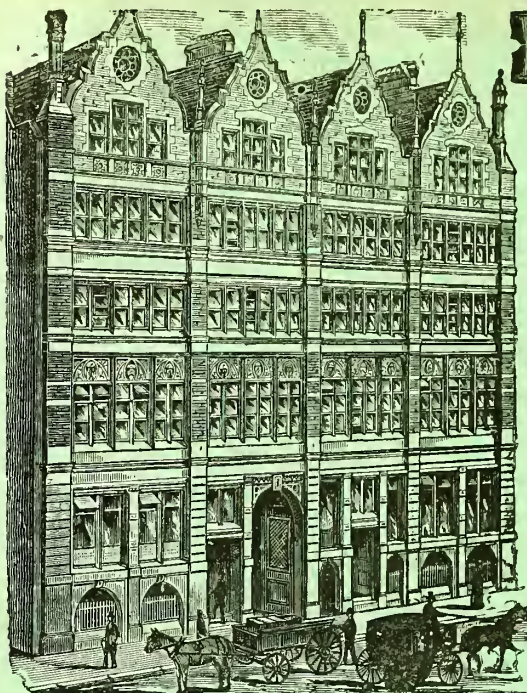
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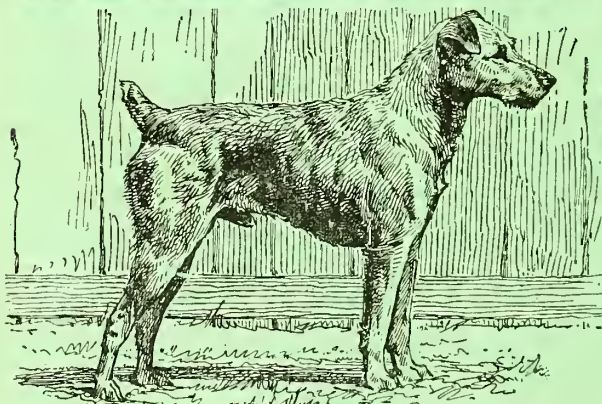
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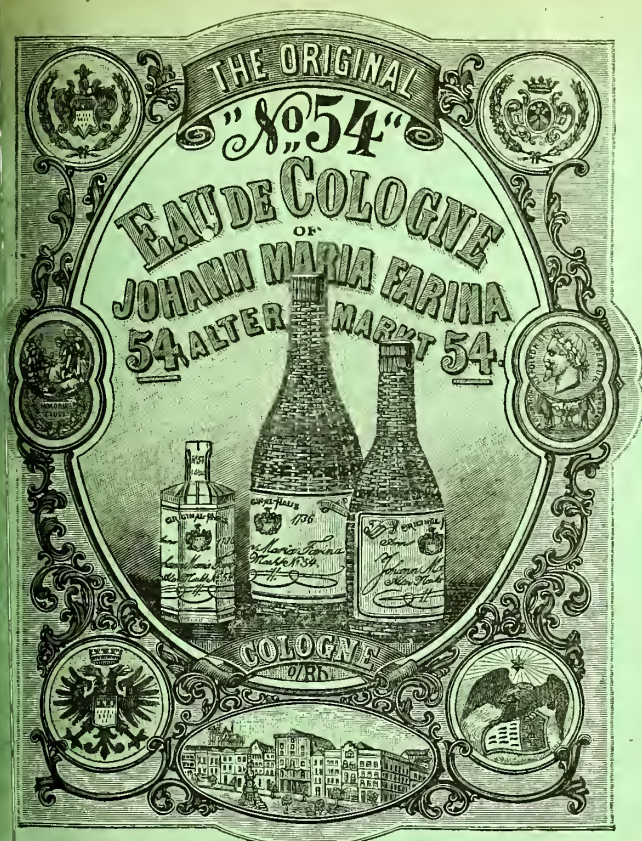
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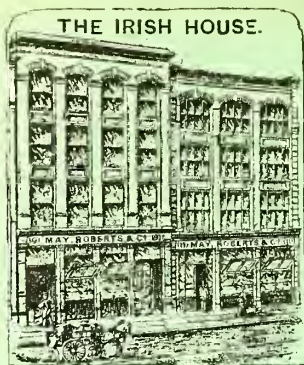
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Mellin's Food | Nestle, H.
Savory & Moore | Tyrer, P.
VI. Cocco (B. Tibbles)

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Beanes & Co.
Benger's Food
Carr, J. R. | Brand & Co.
Burgoyne, Burdidge & Co.
Goodall, Backhouse & Co.
Hawkesley, T. (Steriliser)
Horlick & Co.
Irving, Son & Jones
Kyd & Co.
Lazenby & Son, Ltd.
Liebig Co. | Lorimer & Co.
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Water Association, Ltd.
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Evans, Sons & Co.
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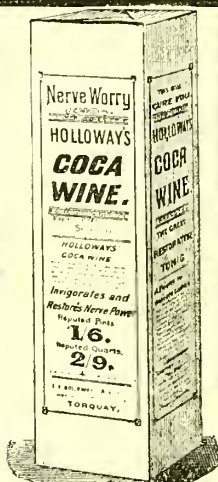
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"	Coca and Kola Wine	2/9	...	"	33/-
"	Coca and Kola Wine	1/6	...	"	18/-
"	Coca and Kola Elixir	4/6	...	"	54/-
"	Coca and Kola Elixir	2/6	...	"	30/-
"	Kola Wine	2/9	...	"	33/-
"	Kola Wine	1/6	...	"	18/-
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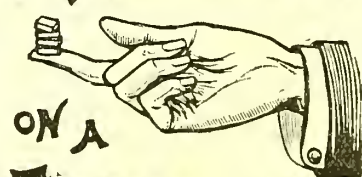
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THE NEW
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FOOD & DRINK TABLETS

— FOR —

Travellers, Cyclists, Athletes,
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ARE LEAPING INTO POPULARITY, and
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LAZENBY'S
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(MULLIGATAWNY, GRAVY, JULIENNE, ETC.)

FOR MAKING FRESH SOUP, OR IMPROVING HOME MADE STOCK.
EACH SQUARE WILL PRODUCE

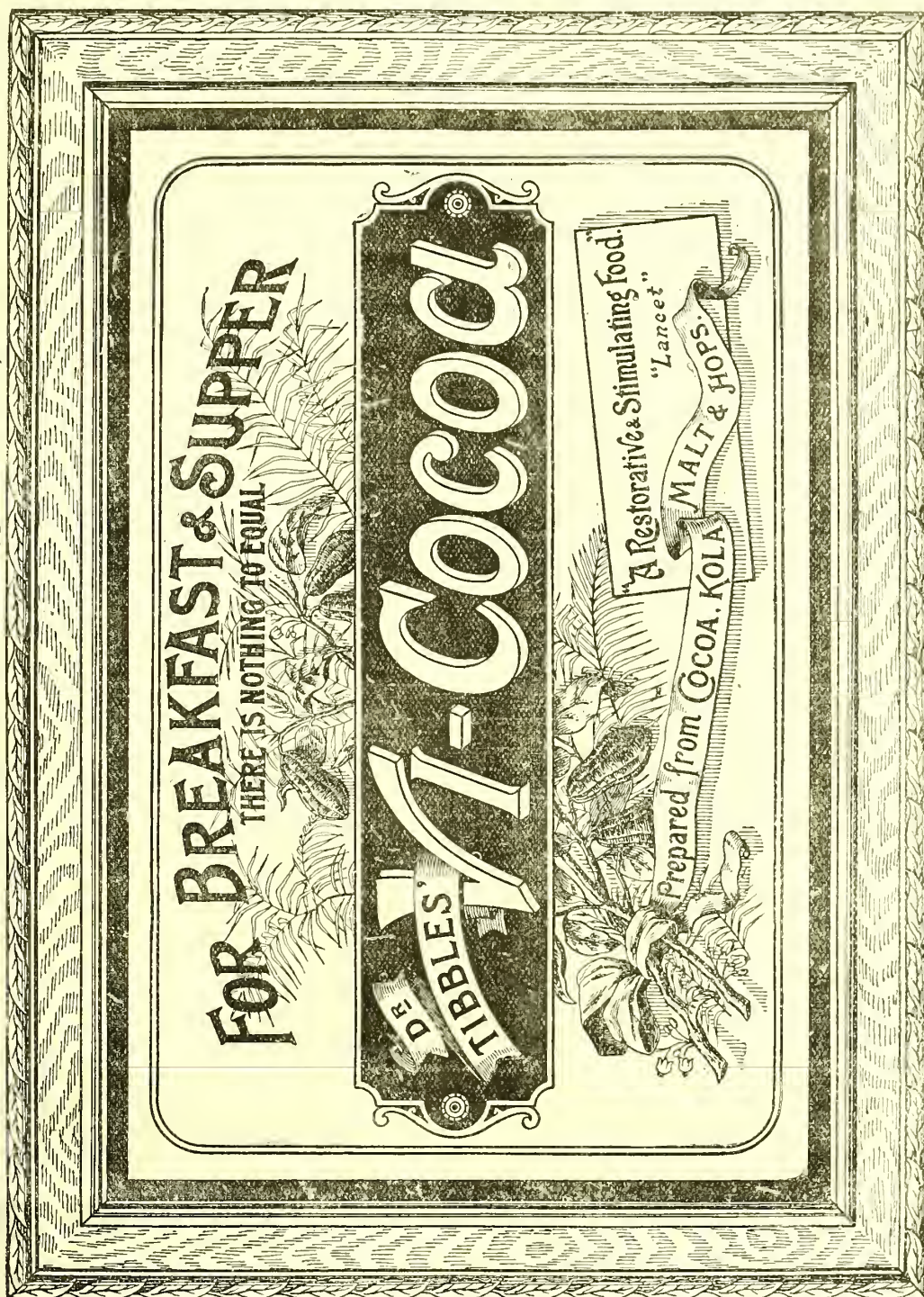


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It is the **STANDARD EMULSION**, and can



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Prepared Greats, Barley, &c. Pure, for Invalids.

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Gluten Flour and Gluten Biscuits, for Diabetics, &c.

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ABSOLUTELY PURE WATER

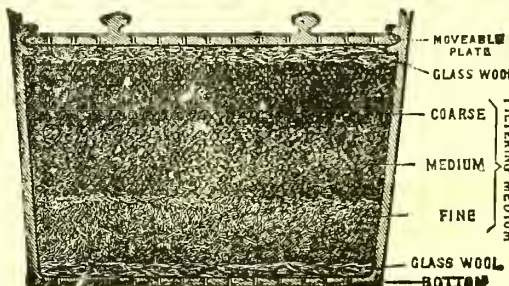
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Pure Spring Water produced from Rain Water by a perfect imitation of Nature's Process. This is the only Filter that will give these results.

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The success of Fellows' Syrup of Hypophosphites has tempted certain persons to offer imitations of it for sale. Mr. Fellows, who has examined samples of several of these, **FINDS THAT NO TWO OF THEM ARE IDENTICAL**, and that all of them differ from the original in composition, in freedom from acid reaction, in susceptibility to the effects of oxygen when exposed to light or heat, **IN THE PROPERTY OF RETAINING THE STRYCHNINE IN SOLUTION**, and in the medicinal effects.

As these cheap and inefficient substitutes are frequently dispensed instead of the genuine preparation, physicians are earnestly requested, when prescribing the Syrup, to write "Syr. Hypophos. FELLOWS."

As a further precaution, it is advisable that the Syrup should be ordered in the original bottles (4/- or 7/-); the distinguishing marks which the bottles (and the wrappers surrounding them) bear can then be examined, and the genuineness—or otherwise—of the contents thereby proved.

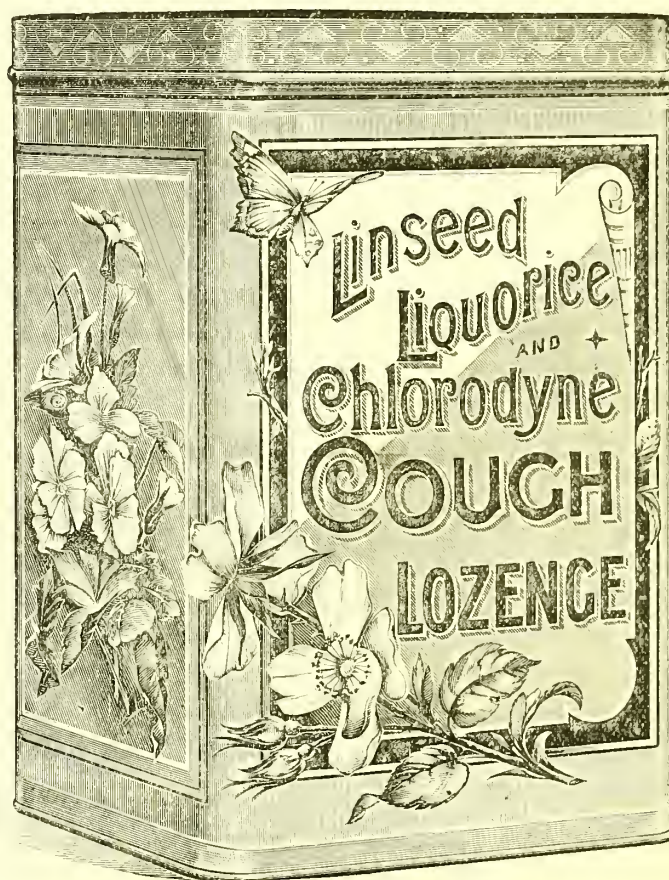
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Which contain in a soluble glycerine jujube cachet pure uncompressed drugs or volatile liquids, and which the "Lancet" of July 31st speaks of as "**FINE PHARMACEUTICAL PRODUCTS, SPECIALLY USEFUL IN ADMINISTERING NAUSEOUS AND UNSTABLE DRUGS OR ANIMAL EXTRACTS.**"

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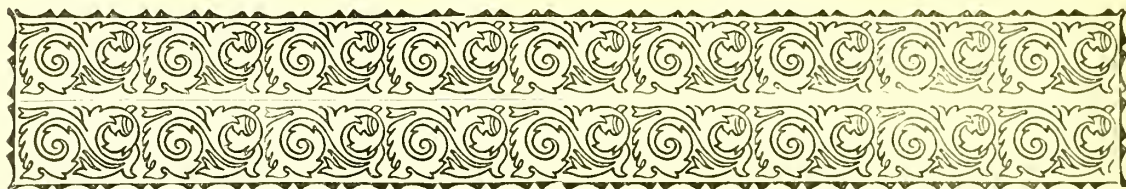
	Per doz. 1/- bottles	Per gross
Aperiens	8/6	3/6
Apiol m. 3	—	4/6
Bismuth and Pepsin	8/6	3/-
Cascara Comp	8/6	2/6
Chlorodyne m 10	9/-	3/6
Creasote m. $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, from	—	3/6
Easton's = 5ss. syrup	—	3/6
Ferrum Redact. grs. 2 and 5	8/6	2/3
Hydrarg. c. Creta grs. 2	8/6	2/-
Lapactic	—	3/-
Laxative	9/6	4/-
Pepsin	8/6	2/6
Peptonic	9/6	3/6
Phenacetin grs. 5	8/6	3/-
Quinine, from	8/6	2/-
Santal Co.	—	4/-
Soda Mint	8/6	2/6
Sulphonai grs. 5	12/-	4/-

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	Per doz. 1/- bottles	Per doz. gross bottles
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502. Bland's Pill grs. 4, Arseniate of Sodium gr. 1/32	9/6	42/-
505. Bland's Pill grs. 4, Ext. Nux Vomica gr. $\frac{1}{4}$	9/6	42/-
510. Hypophosphites Co. (equiv. to 1 drachm of Syr. Hypophosph. Co.)	9/6	42/-
511. Bland's Pill grs. 4, Arseniate of Sodium gr. 1/32, Ext. Nux Vomica gr. $\frac{1}{4}$	9/6	42/-
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560. Creasote m. $\frac{1}{2}$, Hypophosphites Co. (equiv. to $\frac{1}{2}$ drachm Syr. Hypophosph. Co.)		Per gross 4/6

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and Arsenious Acid each 1/100 gr.
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Poly. Capsici .. gr. 1/4.
Aloin, Strychnine,
Acidi Arseniosi, aa. .. gr. 1/30.
Bottles of 100,
15s. per dozen bottles.

Burroughs, Wellcome & Co., LONDON and SYDNEY.

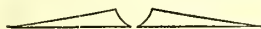
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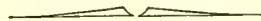
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Emulsion of Petroleum
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Central Pharmaceutical Association of N.Z.
Otago Pharmaceutical Association, N.Z.
Pharmaceutical Society of Queensland.
Pharmaceutical Society of South Australia.
Pharmaceutical Society of Tasmania.
Pharmaceutical Society of Western Australia.

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“C. & D.” DIARY, 1898.

OUR Publisher wishes us to state that he has commenced to book orders for advertisements for next year's DIARY, which will be as big as this year's one, and as useful in every sense. As it speaks every day of the week for a whole year, and is used in pharmacies, offices, and warehouses in all parts of that realm upon which the sun never sets, advertising in it is the safest and best-paying investment going. As the allotment of shares—we mean pages—is in the order of application, we advise all interested to tell the Publisher what space they wish to be reserved.



SOMETHING new in window screens is shown on p. 429.

CUTTING in Sydney, N.S.W., appears to be desperate (p. 438).

EDINGTON'S RINDERPEST-CURE appears to be a success (p. 398).

EDUCATIONAL MATTERS occupy about half of this number, beginning on p. 401.

A SHARP criticism of the British Medical Association is quoted from the *Times* (p. 425).

A MINOR MAN writes brightly on his experience of the Bloomsbury Examiners (p. 404).

THE WIDOWS' CLAUSE has been declared to be unconstitutional in Pennsylvania (p. 398).

A NOVEL apparatus for making compressed tablets is described and illustrated on p. 432.

A GROCER who sold bad tr. rhei. got off with costs when he said it was a few years old (p. 399).

THE INTERNATIONAL PHARMACOPEIA came up again at the Moscow Medical Congress (p. 398).

AN association of alchemy has been started in Paris, and they take it seriously and medically (p. 397).

FURTHER NEWS in regard to the charge of theft against a Johannesburg drug-assistant is given on p. 398.

CHEMISTS at Tunbridge Wells, Sheffield, and Lambeth have given evidence against thieves (pp. 394-5).

DEXTROFORM, guaiaquin, holocaine, and ichthalbin are the new remedies upon which notes are given on p. 429.

SOME OF COMMISSIONER KERR's words of wisdom during the past few days are collected in an article on p. 427.

A MEDICAL student tells how he has got through three years of his curriculum while acting as a chemist's assistant (p. 416).

THE U.S. Consul at Limoges advises American makers of medicinal specialties on the fine business they may do in France (p. 397).

AN ACTION has been commenced against a druggist in Toronto for selling Vin Mariani, on the ground that it is a beverage (p. 399).

WE name thirty chemists to whom new wine-licences have been granted, and we report one refusal which seems to be an illegal one (p. 395).

MR. C. S. ASHTON comments upon the old book described in our last issue, and throws light on the Scriptural references to physic (p. 438).

MR. DODDS communicates his views on how to manage an examination paper, the information being intended for Preliminary students (p. 430).

A SERIOUS FIRE has occurred on the premises of Messrs. Davy, Hill & Son, Yates, and Hicks, wholesale druggists, Southwark Street (p. 394).

NOTES on the scholarships, medals, and Government appointments open to those connected with pharmacy and medicine are given on p. 421.

THE German Apotheker Verein has presented Mr. E. M. Holmes with the Flückiger Medal, and refused to admit women into pharmacy (p. 395).

SOME LETTERS and an editorial article are published on the allegation that unqualified doctors' assistants sell poisons in contravention of the Pharmacy Act (pp. 438 and 425).

THE DRUG SALES on Thursday were rather dull, and only about 25 per cent. of the goods offered changed hands. Essential oils have been brisk and cardamoms are dearer (p. 433).



Local newspapers containing marked items of news interesting to the trade are always welcomed by the Editor.

Fire at a Wholesale Druggists'.

A serious outbreak of fire occurred on Friday night of last week at the premises of Messrs. Davy, Hill & Son, Yates & Hicks, wholesale druggists, 101 and 103 Southwark Street, S.E., when the major portion of their five-storey building was destroyed. It appears that on the top floor a large army order was being executed, and about 120 hands had been engaged upon overtime until 10 o'clock, when everything was apparently safe. At 10.30 smoke was seen coming from the crevices of the fifth-floor windows, where a quantity of drugs were stored in sacks. Word was sent to the headquarters of the Fire Brigade at Southwark, and shortly afterwards there were fourteen steamers, two manuals, a water-tower, and three escapes on the spot, and the fire, which had then obtained a firm hold, speedily extended. In spite of all efforts, it was soon evident that the third, fourth, and fifth floors were bound to be destroyed. At frequent intervals there were explosions of various chemicals, which could be heard for long distances, and these were imme-

diately followed by long tongues of blue, pink, violet, and other brilliantly-coloured flames, which brought a large number of people to the scene. The smell from the burning drugs was very effectual, however, in restraining the invasion of the crowd. So frightened were the poor people living in the squalid houses at the rear of the burning structure that some of them hurriedly commenced removing their household goods, and the small thoroughfares leading into Southwark Street were for a time a scene of the utmost activity. The Salvage Corps were also busily engaged in removing stock from the rear of the building and the first-floor to safe quarters. Barrels, sacks, and cases of drugs and chemicals were thus saved with difficulty. By about midnight the efforts of the firemen began to tell, and the progress of the flames was stayed. A great deal of danger was incurred by the firemen, but happily there was no loss of life. Regarded from the artistic point of view, this conflagration is described as the most successful which has taken place in London for a very long time. The vari-hued flames which were reflected on the neighbouring buildings and the continual explosions caused by potassium chlorate combined to make a spectacle which reminded one rather of a miniature bombardment than of a metropolitan fire. Even to the banks of the Thames the illumination extended, and lit up the great barges moored on the southern side. When our representative visited the scene on Saturday morning the employes of the firm were engaged in removing what undamaged stock remained (including ledgers, account-books, office materials, &c.) to their recently-vacated warehouse at 64 Park Street, close by, where they announce they will temporarily carry on their business. The sketch shows the back of the building where the damage was done, and it will be seen from this that the fire was kept inside the warehouse. The firm are, it is stated, insured in the Sun and other offices. The amount of damage has been roughly estimated at between 30,000*l.* and 40,000*l.* The firm state that their laboratories and factories are intact.

A Lady Thief.

A fashionably-attired lady, giving the name of Frances Harvey Henry, was brought up at Tunbridge Wells Police Court on Friday, on several charges of theft, including the larceny of a bottle of scent, value 1*s.* 6*d.*, the property of Mr. Roger Nicholson, chemist and druggist, The Pantiles. Mr. Nicholson stated that prisoner called at his shop and selected the bottle of scent in question. It was taken away without payment, other articles which she had selected being left until called for by the accused. The bottle of scent was afterwards found in prisoner's possession. She stated that she knew nothing of the scent or how it got into her bag. To another tradesman accused gave her address as "Grosvenor Hotel, Victoria Station, London." The Chief Constable said he believed prisoner was a widow with a private income. Whilst she had resided at Tunbridge Wells she had not paid her cab-fares or hotel-bills. He proved a previous conviction against prisoner for larceny at Windsor three years ago. The Bench sentenced her to six weeks hard labour.

The Manufacture of Picric Acid.

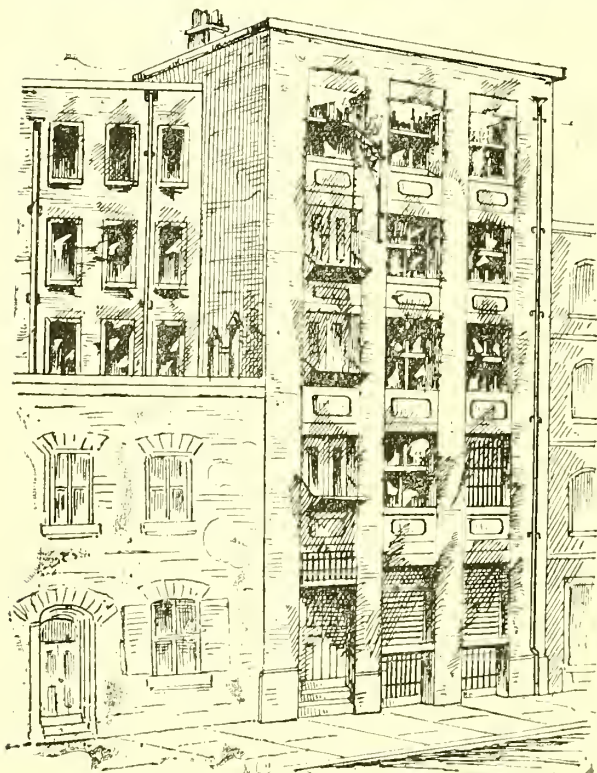
On Saturday, at the Dartford Petty Sessions, Mr. Bruce, on behalf of Messrs. Wallace & Co., manufacturing chemists, of Fenchurch Street, London, E.C., gave notice of an intended application for permission to make picric acid at their works at Crayford. Mr. Bruce stated that the acid is largely used in the manufacture of explosives, and at present is only made in Germany. The Bench fixed October 9 for hearing the application.

Poison in the Cask.

Several persons have been seriously ill, and one, Edward Bowkett, a labourer, aged 50, has died through drinking parsnip-wine which had been made in a cask which had previously contained sheep-wash or weed-killer.

Shop-breaking by a Former Servant.

On Tuesday, at Sheffield, a youth named Francis Parkin, who up to a few months ago was employed as errand-boy by Mr. J. Preston, chemist, of Fargate, Sheffield, was charged with breaking into a warehouse on Mr. Preston's premises. Early on Tuesday morning Parkin appears to have been caught by a police-constable running from a gateway at the side of Mr. Preston's shop. When questioned, he stated that he had been trying to get a sleep inside a barrel; but the officer, disbelieving his story, locked him up. When Mr. Preston came to business in the morning he found that a skylight window had been broken and his warehouse entered. Prisoner was examined, and it was found that marks on his trousers corresponded with those in the dust



diately followed by long tongues of blue, pink, violet, and other brilliantly-coloured flames, which brought a large number of people to the scene. The smell from the burning drugs was very effectual, however, in restraining the invasion of the crowd. So frightened were the poor people living in the squalid houses at the rear of the burning structure that some of them hurriedly commenced removing their household goods, and the small thoroughfares leading into Southwark Street were for a time a scene of the utmost

where the entrance had been effected. It was also stated that he had been before the Court a short time ago on a similar charge. The Bench cautioned Parkin as to his future conduct, but stated that making a "speciality" of the case they would order him to be liberated on payment of 5s., the amount of the damage.

Morbid Cleanliness.

Samuel Charles Archer (21) was placed in the dock of the Marylebone Police Court on August 27 charged with stealing four tablets of soap, the property of Messrs. Blondeau & Co., Malden Works, Kentish Town, his employers. Mr. Holding, the prosecutors' manager, suspected some of the men and had half a dozen of them searched. The prisoner had four tablets in his pockets. He pleaded guilty. Mr. Plowden: What did you take the soap for? Prisoner: To wash with. Mr. Plowden: But why four tablets? Surely one was enough at a time. You must not allow this morbid passion for cleanliness to lead you to steal. You will be remanded in custody for a week.

Sheffield Botany.

On Tuesday, August 31, the students of the Sheffield College of Pharmacy made an excursion by train into the country in search of botanical specimens. Permission having been previously obtained from the proprietors, a practical demonstration was given at the extensive Hands-worth Nurseries on their abundant collection of exotics. Among the plants specially described may be mentioned *Cobea*, *Canna*, *Smilax*, *Croton*, *Nepenthe*, *Begonia*, *Ficus*, *Lapegeria*, *Bouvardia*, and *Sarracenia*.

Theft from a Chemist.

At Lambeth Police Court on Monday a youth named George Wilson, who refused to give any account of himself, was charged with stealing a bottle of scent from the shop of a chemist in Brixton Road. He was seen to enter the premises during the temporary absence of the proprietor, and take the bottle from the counter. He was stopped by a passer-by, and given into the custody of the police. His excuse now was that he was out of work, and his Worship sentenced him to fourteen days with hard labour.

An Assistant's Day Out.

At Southwark Police Court on Saturday a young man, who gave the name of Arthur Evans, and said he was employed as an assistant to a chemist at Peckham, was charged with being disorderly and refusing to quit licensed premises. He admitted the charge, but said he had been out for a day's holiday, and must have had a glass too much. His Worship advised him not to do it again, and imposed a fine of 10s. and costs.

An Owner Wanted.

At Woolwich Police Court on Saturday Wm. Saxton was charged with being in the unlawful possession of five sponges. Prisoner was stopped at the Royal Albert Docks by a constable, who found the sponges on him. The police stated that the sponges were quite new, and prisoner, who said he picked them up, was remanded.

Death after a Sleeping-draught.

An inquest was held at Holywell, on Monday, on the body of a young man named McNamara, who was found dead in bed after having taken a sleeping-draught the previous night. Mr. J. B. Marston, solicitor, Mold, watched the case on behalf of Mr. S. Jones, chemist. It was stated that the deceased was in ill-health, and was in the habit of taking sleeping-draughts. His heart was affected, and when a boy he was subject to epileptic fits. On Friday his father heard him very restless in the next room, and went to him. At his request he gave deceased the bottle produced, which was about a quarter full of some mixture. Deceased drank the contents of the bottle, and witness left him. He had frequently obtained sleeping-draughts from the deceased from Mr. Jones, but he had noticed that the bottle drunk from intimated "four doses." The next morning deceased was found dead. Mr. Marston said he could give the contents of the bottle, and the proportions of bromide of potassium and chloral. The inquiry was adjourned for a *post-mortem*.

Wine-licences.

In addition to those reported last week, licences for the retail sale of wine have been granted to the following chemists:—

Mr. S. Count, King's Lynn.
Mr. T. B. Alkins, Tamworth.
Mr. Fred. Jacks, Stone, Staff.
Mr. Whitaker, Brierfield, Lancs.
Mr. Alfred Perks, Beeston, Notts.
Mr. James Jarvis Rainey, Spilsby.
Mr. Edward Parker, Scarborough.
Messrs. J. Marson & Son, Stafford.
Messrs. J. & H. A. Averill, Stafford.
Messrs. Clare & Hunt, Scarborough.
Mr. Thomas Parker, Hailsham, Sussex.
Mr. George Thexton, Kirkby Lonsdale.
Mr. Edward Walker, Willenhall, Staffs.
Mr. Edmund Jones, Miles Bank, Hanley.
Mr. Thomas Charles, Queen Street, Burslem.
Mr. George E. Davies, Moseley, Birmingham.
Mr. Roland Prince, Market Street, Loughton.
Mr. H. C. Whitby, Moorside Terrace, Widnes.
Mr. Northern, Nottingham, near Bromley, Kent.
Mr. James E. Walker, 77 Church Street, Preston.
Mr. H. J. Willis, 48 High Street, New Brompton.
Mr. Frederick Neal, York Street, Heywood, Lancs.
Mr. Frederick P. Pemberton, London Road, Derby.
Mr. T. S. Waymouth, Fore Street, St. Mary Church, Devon.
Mr. Ernest R. Cherrett, 18 Church Street North, Sunderland.
Mr. Frederick Victor Butterfield, Station Bridge Road, Harrogate.
Mr. P. Cornell, manager for Cornell & Cornell (Limited), 14 Tavern Street, Ipswich.
Mr. B. Brooke (manager to Mr. George Coverdale), 9 and 11 Gladstone Road, Scarborough.
Messrs. William Waller & William McIntyre (trading as Waller & Riley), 22 Rock Street, Bury.

At the St. Helens Licensing Sessions, Mr. Garner applied on behalf of Mr. Wallbridge for a wine-licence for his chemist's shop in Liverpool Road. Mr. Wallbridge said he desired to supply port and medicated wines, which were prescribed for invalids. Mr. Eccles: Are you prepared to give an undertaking that you will only sell medicated wines? Mr. Wallbridge: I cannot. I want to supply port. Mr. Eccles: I oppose the application then. The certificate was refused.

At Stewponney Licensing Sessions, Mr. Waldron appeared in support of an objection made by Mr. Joseph Share, a publican, against the renewal of the wine-licence held by Mr. Francis Round Fletcher, chemist, Dudley, on the ground that he had sold wines otherwise than in his trade as a chemist. Mr. J. Chulow, for Mr. Fletcher, said the objection was not an objection contained within the four grounds of objection specified in the Act, and the Justices could not therefore entertain the objection. The Magistrates' Clerk said that was so. Mr. Waldron said the question was upon what grounds the licence was granted. The Magistrates' Clerk said they could not go behind the licence. Mr. Waldron asked that a note should be taken of his objection. This was that the four grounds did not apply in this case, as the licence was obtained by a legal fraud, and was therefore a nullity. By the Licensing Act of 1872, section 72, clause 8, the Justices had no power to grant the licence at all. The licence was granted especially for the sale of medicated wines and spirits, made up in medicine, and sold by medical practitioners or chemists and druggists, and therefore was a nullity. The Bench said they had no power to deal with the objection, as it was not upon any of the four grounds specified in the statute. The licence was accordingly renewed. Mr. Waldron said he should ask for a case to be stated.

Misuse of White Precipitate.

An inquest was held at Blitchingley on August 25 respecting the death of Amelia Verrall, who died from blood-poisoning. She was 58 years of age, and had suffered for many years from ulcerated legs. About a week before her fatal illness she applied a lotion which she had procured from Mr. Smith, chemist, containing sugar of lead. This

was purchased by deceased's daughter, who made no mention of the use for which it was intended. Dr. Oldman stated that deceased told him that she had dressed the wounds on the legs with the lotion of sugar of lead and white precipitate powder. The former would be a proper thing to apply to the wounds, but certainly not the precipitate. Deceased said she had been in the habit of dusting the powder on to the wound after washing it with the lotion. In his opinion the white precipitate was the cause of death. Mr. Smith, chemist, gave evidence, and a verdict of death from misadventure was returned.

False Teeth for Paupers.

At the meeting of the Medway Guardians on August 26, the case of an inmate of the workhouse named Groggin was brought up. It was explained that Groggin was a musician, but had lost his front teeth, and consequently could not follow his avocation. It was suggested to provide Groggin with a set of false teeth, as other inmates had been provided with glass eyes, tooth-brushes, and tooth-powder. The Board declined to provide the false teeth, and told Groggin he must leave the house.

Jersey Pharmacy Law.

At the Royal Court of Jersey, on August 23, Ernest Albert Jean, presenting a certificate of the Pharmaceutical Society, was registered under the new Pharmacy Act. Mr. Jean was assistant to the late Mr. R. F. Davis, and will probably be the first to carry on a business for a widow under the new law. Mr. John James Baker, assistant with his father, Mr. John Thomas Baker (Waterloo Pharmacy), was also registered on presenting a similar diploma.

Trade Trips.

Daisy (Limited) gave their employes a free trip to Scarborough and back on Saturday last. It gave great pleasure to eighty people.

A party of Messrs. Potter & Clarke's employes, numbering 54, travelled to Sandgate on Saturday last. Dinner was served at the Grosvenor Hotel, and among the company were Mr. and Mrs. Potter, Mr. and Mrs. Goddard Clarke, Mr. and Mrs. H. A. Potter, and Mr. and Mrs. Wren. The usual toasts were proposed and replied to.

Cricket.

At Crouch End, on August 21, Barron Harveys C.C. played Mappin & Webb's C.C. B. H. scored 92 for three wickets, against M. & W. 75. On August 23 B.H.C.C. played Stevenson & Howell's C.C. Result: Barron Harveys, 100 for six wickets; Stevenson & Howell, 44.

Drunk and Disorderly.

At the West Ham Police Court on August 27, Tom Clough, described as a chemist, of 342 High Street, Stratford, was charged with being drunk and disorderly and assaulting Sergeant Finden at High Street the previous day. Defendant pleaded guilty, and Sergeant Finden said he was mad drunk. At the police station he was violent, spat in witness's face, and struck him. Fined 5s. and costs.

Plymouth, Devonport, Stonehouse, and District Chemists' Association.

At the monthly meeting of this Association, held on August 31, Mr. F. Maitland in the chair, it was resolved to hold the annual meeting on October 6, at 8 P.M. Also to hold a special meeting on September 30, at 9.15 A.M., to receive nominations for the election of officers for 1898. It was resolved that a letter of condolence be sent to Mr. H. P. Hearder expressing sympathy with him in the loss of his son in South Africa. A vote of thanks was passed to Mr. J. Maurice for gifts of books and magazines. A committee was appointed to arrange for the annual dinner on either October 20 or 27.

Sid Death of a Chemist's Mother.

An inquest was held at Dover on Monday on Mrs. Thompson, the mother of a well-known and respected chemist in the town, who committed suicide by throwing herself from a window. She had shown symptoms of mental aberration,

but not sufficient for a medical man to order her detention. She caused much uneasiness to her friends, and notwithstanding their careful watch she slipped out of the house on Saturday night, and was found after diligent search on the beach near the pier. She at first refused to return home, but was got to bed at five o'clock in the morning, a policeman remaining in the downstairs room while Mr. Thompson, who regarded the case as serious, went for a doctor. During his absence the deceased, who appeared to be asleep when he went out, threw herself head foremost into the street, dying a few hours later. The jury returned a verdict of "Suicide during temporary insanity."

A Chemist's Unmuzzled Dog.

At Exeter Police Court, on Wednesday, George Stocker, chemist, of 189 Sidwell Street, was summoned for allowing his dog to be in a public place unmuzzled. Mrs. Stocker appeared for her husband, and stated that the senior assistant being away her husband was unable to attend. The dog went out of the house with a muzzle on, but came back without it. It was supposed that the muzzle had been stolen. Other evidence to this effect was given, and the Bench said they considered the defendant had every desire to conform with the order. A technical offence, however, had been committed, but they would only fine him 2s. 6d., inclusive of costs.

A Chemist's Record Cycle Ride.

Mr. F. W. Bates, chemist and druggist, Brooks' Bar, Manchester, accompanied by a friend, recently performed the following cycling feat. They left Chepstow, on the Severn, at 7 A.M., and cycling through the Wye Valley, Monmouth, Ross, Ledbury, Worcester, Kidderminster, and Stourbridge, reached Wolverhampton, where, on account of rain, they trained to Stafford; then, remounting their eyes, they proceeded *via* Stone, Holmes Chapel, and Knutsford, to Manchester, which city they reached at 7 A.M., having travelled continuously for twenty-four hours, twenty hours of which were spent in the saddle. The cyclometer registered 167 miles.

Guardians and Cod-liver Oil.

At the last meeting of the Spalding Board of Guardians the contract for the supply of cod-liver oil was given to Messrs. Donington & Co., chemists, of Market Place, Spalding, at 4s. 8d. per gallon.

Charge of Forgery.

At the Lambeth Police Court, last week, Ernest Carnall was charged with uttering and forging six ledger receipts, amounting to 14l. 18s. 11d., and was further charged with embezzling the sum of 19s. 11d., the money of his employers, Messrs. R. White & Sons (Limited), mineral-water manufacturers, of Camberwell. Prisoner admitted his guilt, and the Magistrate remanded him for a week, saying he would accept bail in 250% for his appearance.



Local newspapers containing marked items of news interesting to the trade are always welcomed by the Editor.

Business Changes.

Mr. H. R. Warren, L.P.S.I., has purchased the entire interest in the Athlone Medical Hall, lately carried on by J. H. McManus & Son.

Messrs. Hayes, Conyngham & Robinson (Limited), Dublin, have opened a new branch pharmacy in the rising township of Clontarf. The shop is elegantly fitted, and of course well stocked. The new pharmacy will be under the management of Mr. David M. Watson, L.P.S.I., who, besides being a resident for many years in Clontarf, is well known in Dublin

pharmaceutical circles as a competent and energetic young pharmacist.

The Dublin Horse-show.

Last week Dublin was *en fête* in connection with the great National Horse-show. During the three days of the show over 65,000 visitors passed the turnstiles. The exhibits in the galleries and in the grounds were well up to previous years, and included representations by the chief drug and chemical houses in Ireland and England. Among the exhibitors of druggists' goods were Day, Son & Hewitt, with veterinary medicine-chests; the Permanent Nitrate Committee, London, who showed samples of nitrate of soda of 95-per-cent. purity, with specimens of "caliche," the raw material from which nitrate of soda is refined; Jeyes' Sanitary Compound Company, with disinfectants and sheep-dip; McMaster, Hodgson & Co., Dublin, with linseed-cake meal and powders and cattle-medicines; Lawes' Chemical Company, with some of their new disinfectants and chemical fertilisers; Odam's Manure and Chemical Company; and, to lend an air of grace to the whole, Blondeau et Cie. had a much-admired selection of their soap and perfumes on view.

French News.

(From our Paris Correspondent.)

PHARMACY AT THE BORDEAUX HOSPITALS.—It appears that the pharmaceutical service of the Bordeaux hospitals is in the hands of three pharmacists, their occupation consisting in making analyses and in general supervision. They do not themselves dispense prescriptions, this being done by Sisters of Charity attached to the hospitals. So far this arrangement has worked satisfactorily, but as "internats," or house-pharmacists, exist in the hospitals of other leading French towns, a movement is on foot to introduce the same system at Bordeaux in place of the Sisters of Charity. It is not pretended that the latter perform their duties unsatisfactorily, but it is thought that by giving young pharmacists positions in the three Bordeaux hospitals, to be obtained by competition examinations, the standard of studies at the Faculty of Medicine and Pharmacy might be improved. It is needless, perhaps, to say that some local municipal councillors are responsible for the suggestion, and they say that both the hospitals and patients will profit by having the services of the *élite* of the pharmacy students.

ALCHEMY AT PARIS.—*Le Temps* has published the statement, therefore it must be so. The gay city has now an "Association of Alchemy." More than this: the new Society publishes a review, bearing the title of *Hyperchimie*, and it sees the light every month at Amiens, under the supervision of M. Jollivet-Castelot, General Secretary of the Association. On the title-page of the journal we learn that "La Matière est une. Elle vit, elle évolue. Il n'y pas de corps simples." (There is but one substance. It lives and moves. There are no simple bodies.) It appears an effort is being made to spread the movement in the provinces, and a "Free University of High Alchemical Studies" has been established. It comprises the "Faculty of Hermetical Sciences," the "Faculty of Magnetic Sciences," and the "Spirite Faculty." Diplomas of licentiates and doctors are issued, and the members belong to the "Martinist Order," which is the name of the secret society of alchemy. It is announced that a course of lectures in the magnetic sciences will be commenced in October, and that students may hope to obtain diplomas to "practise freely magnetism and massage in treating patients." One of the initiators of the movement, M. Sédir, explains the object of the movement as follows:—"We propose to undertake the theoretical and experimental study of the evolution and transmutation of bodies. With this object we study the processes of the ancient alchemists—such as Roger Bacon, Paracelsus, Nicolas Flamel, Albert le Grand, Raymond Lully—in order to confront them with the methods of official modern sciences and the work of Berthelot." The Association comprises seven councillors, and honorary members consisting of savants who approve of the movement without actively taking part in it. M. Camille Flammarion is said to be amongst these. Next come "master members," who superintend the students'

work; and, lastly, associates, or "membres adhérents," who are admitted after passing an examination which comprises the general history and theory of alchemy, as well as the elements of physics and chemistry. M. Sédir offers the following theory. He says: "The art of the alchemist consists in uniting the male metals to the female metals. I contend that metals can be divided into sexes in the same way as animals and certain vegetables. The prototype of male metals is gold, which for us represents the Sun and Appollon. Iron and sulphur are male metals. The prototype of female metals is silver, which we call the Moon. Copper is a female metal." He declares that several of his friends have succeeded in making gold, though only in very small quantities. He especially names a M. Strindberg, and also mentions that a M. Tiffereau has found the "microbe of gold." A few weeks ago the Association of Alchemy of France opened a well-arranged laboratory in accordance with the exigencies of "spagyric medicine." Remedies and elixirs of "hermetic homeopathy" are prepared there by MM. Sédir and Jollivet-Castelot, and at present these remedies are supplied free to physicians on application; but the demand has proved slack. The remedies are described as a "spagyric homeopathico dilution, containing a thirty-thousandth part of digital." A dilution of verveine and also a panacea entitled the "perfect dynamisateur." M. Jollivet-Castelot has written a "Treatise on Hermetism," in which he indicates how the alchemist should occupy his time.

AMERICAN DRUG-PREPARATIONS IN FRANCE.—United States Consul Griffin, of Limoges, has discovered an Eldorado for American pharmaceutical preparations. This is how it came about:—"Inquiries having been made at this consulate by some of the leading druggists of central France concerning certain American preparations of drugs, a few samples were shown to them, and they expressed themselves satisfied and well pleased with what they termed 'a triumph of American progress.' It seemed to these gentlemen that an excellent opportunity for the introduction of large quantities of these goods from the United States presents itself." So he goes on to tell his countrymen what they ought to do to trap this promising market. "Many of the new remedies," he says "although they are well known and appreciated by physicians, fail to become popular because of the difficulty in preparing them. The provincial druggists are often unable to procure these drugs except in a crude or unprepared state." He thinks it right to mention that there are some difficulties in the way. For example, "the French laws regulating the sale of liquid poisons are exceedingly strict, and the danger of taking an overdose prevents many persons from using these remedies unless prescribed by a doctor," which is, to say the least, an incomplete exposition of French law. The Consul continues—"Samples of American compressed tablets have been shown to a few druggists and doctors, who immediately conceded that these preparations were put up in the most compact and convenient manner possible, and that such goods were much needed in France, because a larger variety of remedies could be carried, and no time would be lost in making up prescriptions, nor would there be any risk of overdosing." Then he names a number of medicines suitable for tablet-form. Sugar of milk he thinks might, at present prices, be advantageously exported to France. Another piece of advice is worth noting. "A certain quantity of proprietary medicines might find a ready sale if put upon the market in a wise manner, but it will be absolutely necessary to have the formulas printed on every bottle." "Putting proprietary medicines on the market in a wise manner" is excellent. "Such common preparations as seidlitz-powders and citrate of magnesia, and heavy drugs like glycerine, borax, potash, cod-liver oil, borate of soda, caustic soda, and alkalis are used in large quantities in this country." On the strength of his experience the Consul declares that "the French admit that the manner of putting up drugs in the United States is greatly superior to that of other countries, but the system of foreign weights, measures, and currency forms a barrier to their introduction into this Republic." He therefore explains that "all drugs should be put in neat, but not too large, packages; the matter of colour and taste are important items to take into consideration, because the masses are not accustomed to taking medicine without a doctor's prescription, as are the people of the United States. If a general depot of American drug-preparations were established in Paris where the articles

could be seen and examined, it would greatly aid in the introduction of goods." A few years ago I was introduced to an amiable American Vice-Consul in Paris, and I afterwards inquired where he had previously had experience in consular work. "Nowhere," was the reply, "but he is a very promising poet." Has Commercial-Agent Griffin, of Limoges, some such hidden qualification for his post?

Colonial and Foreign News.

AN EXPENSIVE PHARMACY.—The Reichenhall (Germany) Apotheke has just been sold for 450,000m. (22,500*l.*). It is a retail pharmacy.

A UNIVERSITY FOR WOMEN is the latest Japanese idea, and they are taking it up heartily, with the support of the Emperor and Empress. Already 300,000 yen (over 60,000*l.*) has been subscribed for it.

ADVANCE JAPAN.—It is reported that an exhibition of Japanese manufactures is to be opened early this month in Bombay under the protection of the Japanese consul there. Nothing on a very large scale is anticipated for a start, but should the exhibition receive the encouragement it undoubtedly deserves, says an Indian paper, it will be extended.

CHEAP QUININE.—The practice of selling quinine in pice-packets to the masses of Burmah through the agency of the Postal Department has not been attended with any great success, after a trial of almost two years. It is said that the people object to the bitter taste of the drug, and it is suggested that quinine pills should be introduced. In some parts of the Southern Shan States the people are said to be very eager to obtain quinine.

AN INTERNATIONAL CONGRESS OF COMMERCE AND INDUSTRY is to be held at Brussels from September 6 to September 11. It has been organised by the Union Syndicale of Brussels, and will be held at the Bourse. Questions of patents, international commercial law, the recovery of debts in foreign countries, co-operative societies, insurance, Sunday labour, and international tariffs for transport are among the subjects for discussion by the Congress.

THE WIDOWS' CLAUSE UNCONSTITUTIONAL.—The Pennsylvania Pharmacy Law has been declared unconstitutional by Judge Williams of the Supreme Court, because the widow or administrator of a drug store can run the business without being registered. He said that the exemption of widows was not protection to the public, but rank injustice to individuals. He saw no reason why all widows should not be ruled outside the law if druggists' widows are to be.

AMERICAN PHARMACEUTICAL ASSOCIATION.—This association met at Hotel Lafayette, Lake Minnetonka, Minnesota, on Tuesday of last week, under the presidency of Professor J. E. Morrison, F.C.S., of Montreal, an Irishman, who is the youngest man that has ever occupied the chair. The programme was as follows:—Tuesday, August 24, Council meeting, first general session, meeting of nominating committee, reception and promenade concert; Wednesday, second general session, commercial section, travellers' entertainment; Thursday, scientific section; Friday, pharmaceutical education and legislation; Saturday, final business session, boat ride, and lectures by President Northrup and Professor F. J. Wulling, of the University of Minnesota; Sunday was devoted to rest; and Monday to an excursion to Taylor Falls and Delles of St. Croix.

INTERNATIONAL MEDICAL CONGRESS.—The pharmacognosy and pharmacy section of this Congress held its meetings in the Moscow University, under the presidency of Professor Tichomirow. His vice-presidents were Professor Tschirch, of Berne; Professor Poehl, of St. Petersburg; Dr. Heger, of Vienna; and Professor Alexandrow, of Dorpat. The section did not do much business of importance, and the members were unable to deny themselves a discussion on the feasibility of an "International Pharmacopœia," German gentlemen taking the opportunity of airing the views which they did not go to Brussels to express. Professor Tschirch, who must have been a baby when the International Pharmacopœia first appeared on the pharmaceutical horizon, spoke extensively on the subject, and laid down the prin-

ciples which should guide the compilers of the work; and there seemed to be a general feeling in the meeting that the thing should be gone on with.

THE DRUGGISTS' LEAGUE FOR SHORTER HOURS is a title of a New York organisation formed to secure "the consummation devoutly to be wished." The promoters have issued a sixteen-page pamphlet, containing, among other information, a table showing the hours of work and wages of sixteen trades, and of the latter the drug "clerks" assistants receive the smallest pay for the longest day of service. In addition to this they are allowed only one other Sunday for themselves, and have no annual vacation. About 50 per cent. of this down-trodden class sleep in the rear of drug-stores. The League has a membership of nearly 400 persons, consisting about equally of proprietors and "clerks" from the better class of drug-stores.

THEFT AT A JOHANNESBURG DRUG-WAREHOUSE.—It was stated last week that Harry Charles Tomsett, a young man in the employ of Messrs. P. J. Petersen & Co., druggists, Johannesburg, had been arrested on a charge of theft from his employers. When he came up on August 4 after remand he made statements implicating two other persons who were charged with receiving goods knowing them to have been stolen. These were Alexander Heymann, a chemist in Johannesburg, and David Murray, a man who had formerly been in Petersen's employment. Tomsett, who gave evidence against these two prisoners, said Murray asked him if he wanted to make any money. He said he was agreeable. Then it was proposed he should take stuff from Petersen and send it to Heymann's. Heymann was to pay half the value, and Murray and Tomsett were to share the proceeds. He narrated what he had taken, and also gave particulars of the fast life which, according to his story, Murray and Heymann introduced him to. The trial was further adjourned.

THE NEW RINDERPEST-CURE.—The Albany Rinderpest Committee had Dr. Edington before them, at a meeting on July 28, to explain his new inoculation prophylactic for rinderpest, as described in the *C. & D.* last week. A very long discussion took place, in the course of which Dr. Edington gave the following remarkable proof of the efficacy of his "lymph":—"We went to a clean, or practically clean, farm at Belmont, though we found afterwards that rinderpest showed on the next farm. We took 12 cattle on the farm; 126 we inoculated, leaving 2 as 'controls.' Of the 126, one showed rinderpest, but I suspect had been infected before inoculation. The 125 are all well and the 2 'controls' are dying. At Kimberly, out of a herd of 20, all are living; and out of a herd of 14, which were immunised and inoculated with blood, all are well. One animal got enough blood to kill 1,000 cattle, another enough to kill 2,000, and a third enough to kill 10,000. After ten days all are well."

DEUTSCHE APOTHEKER VEREIN.—At the meeting of the Society in Strassburg, last week, the Flückiger medal was awarded to Mr. E. M. Holmes, F.L.S., curator of the Pharmaceutical Society's museums, in recognition of his services to pharmacognosy. The medal is awarded every five years only, and on this occasion was given to Dr. B. H. Paul for conveyance to his colleague. Dr. Paul, in receiving it, said that this made one more link between the English and German craft. The President of the Society, Herr Frölich of Berlin, in introducing several distinguished visitors, referred to his "dear old friend," Dr. Paul, and gave a welcome to Professor Remington, of Philadelphia. The professor, in replying, said:—"Mr. President and Gentlemen,—I thank you on behalf of my American colleagues for this warm reception. It has always been a great pleasure to me to look forward to meet the German apothecaries. I have had the pleasure of being in Strassburg before, when I had also the pleasure of meeting Prof. Flückiger, and now, when I come here, I see so many of the German apothecaries, whose names are written in history, and when your President, Herr Frölich invited me to come here with my friends, I felt this to be one of the greatest pleasures of my life. And now with my American colleagues, I can only say—*Dreimal hoch der Deutsche Apotheker Verein.*" The chief topic of discussion was the desirability of admitting women to pharmacy, which subject was raised on a motion submitted by the Hesse Society. A long and amusing discussion took place, and eventually the motion was rejected.

New Companies and Company News.

MOSELEY MINERAL-WATER COMPANY (LIMITED).—Capital 1,000*l.*, in 1*l.* shares. Objects: To acquire and carry on the business of mineral and aerated water manufacturers now carried on at William Edward Street, Birmingham, under the style of "The Moseley Mineral-water Company." Registered without articles of association.

MIDDLESBROUGH MINERAL-WATER COMPANY (LIM.).—Capital 25,000*l.*, in 1*l.* shares. Objects: To enter into an undescribed agreement, and to acquire, take over, and amalgamate the undertakings of the Middlesbrough and District Mineral-water and Bottling Company (Limited), of "Charles McDonald" and of "H. H. Wren & Co." The first directors are Alfred Forrester, Charles McDonald, and James W. Tilley.

WILLIAM ROBINSON & Co., OF CLAYTON (LIMITED).—Capital 15,000*l.*, in 10*l.* shares. Objects: To acquire, take over as a going concern, and carry on the business of manufacturing chemists, now carried on by "William Robinson & Co.," at the Hope Chemical-works, Clayton, Manchester, and to enter into an agreement with William Robinson. Registered office, Hope Chemical-works, Crabtree Lane, Clayton, Manchester.

HALFORD PLANT & Co. (LIMITED).—Capital 5,000*l.*, in 1*l.* shares. Objects: To enter into an agreement with Richard Garner and Frederick J. Pountney for the acquisition of the business carried on at Warstock, Yardley Wood, near Birmingham, as "Halford Plant & Co.," and to carry on the business of manure and fertiliser manufacturers, chemists, druggists, drysalters, oil and colourmen, &c. The first directors are Charles V. Pugh, Harry S. Brown, Richard Garner, and Frederick J. Pountney. Registered office Warstock, Yardley Wood, near Birmingham.

IMPERIAL EAU DE COLOGNE COMPANY (LIMITED).—Capital 5,000*l.*, in 1*l.* shares. Objects: To enter into a certain agreement with a company of the same name (registered in 1896) for the acquisition of its business, and to carry on the business of perfumers, distillers, chemists, drysalters, and importers and manufacturers of and dealers in eau de Cologne, lavender-water, scents, perfumes, &c. The first subscribers (each with one share) are:—Lieutenant Alex. Lyon, Naval and Military Club; Cyril Wheatley, Windham Club, gentleman; Joseph Edyor, 146 King's Cross Road, traveller; Bertram R. Beale, Bucklands, Teddington, engineer; Francis H. Russell, Long House, Leatherhead, gentleman; Frank Bowness, 25 Elms Road, Clapham Common, traveller; G. J. Bayspool Porter, 2 Wardrobe Place, Doctors' Commons, solicitor. The first directors are Bertram Beale, Alexander Lyon, Albert E. Rose, and Cyril M. Wheatley. Qualification, 100*l.* Remuneration, 20 per cent. of the net profits, divisible after the payment of 7*l.* per cent. per annum.

THE WEST OF SCOTLAND CHEMICAL COMPANY (LIMITED).—At an extraordinary general meeting of this company, held at 209 West George Street, Glasgow, on August 27, a resolution was adopted that it had been proved to the satisfaction of the meeting that the company could not, by reason of its liabilities, continue its business, and that it was advisable to wind it up, and that it be wound up voluntarily. Mr. Robert Martin Macleay, C.A., Glasgow, was appointed liquidator.

SPRATT'S PATENT (AMERICA), LIMITED.—The annual meeting of this company was held on August 2, Mr. Robert H. J. presiding. The report stated that the profit on the trading account for the year ending May 31 last amounted to 1,961*l.* The chairman said there was every reason to believe that before long they would see some return on their investment. The accumulated debenture interest amounting to 660*l.* 3*s.* 6*d.* has been capitalised by the issue of 4,650*l.* 5*p.* cent. debentures, and the date of the repayment of the debentures had been prolonged by mutual consent for five years. Messrs. Edward Wylam and C. T. Kingzett

resigned their seats on the board, the former through ill health, and the latter through pressure of other business. The directors recommended the election of Mr. Stephen Wingrove, general manager of Spratt's Patent (Limited), and one of the largest shareholders in the company, as a new director. The chairman, in reply to questions, said that up to the present time the rise in the price of flour had not affected them, but it was impossible to say whether it would do so, or to what extent. It was incorrect to suppose, as some of the remarks suggested, that the parent company held all the debentures, but he consented to represent the views of the shareholders with reference to a reduction in the rate of interest payable to it on its debentures.

Legal Reports.

VIN MARIANI IN ONTARIO.

At the Police Court, Toronto, on August 12, before Mr. Kingsford, magistrate, Messrs. Hooper & Co., druggists, King Street, were summoned by the Treasury, under the Ontario Liquor Licence Act, for selling Vin Mariani, which was alleged to be an intoxicating liquor. Crown-Attorney Curry appeared for the prosecution, and Mr. Levesconte and Mr. J. J. MacLaren, Q.C., for the defence.

The purchase of a bottle of the wine having been proved, Professor Ellis, of Toronto, said he had analysed it and found it to contain wine and coca erythroxylin. It contained about 13½ per cent. of alcohol. It might produce a certain kind of intoxication, but he would class it as a medicine and not as a beverage. It was not so nasty as quinine, but if a man took sufficient Vin Mariani to become intoxicated he would be afraid of the results because of the amount of coca in it. In reply to Mr. Levesconte, Professor Ellis said that all tinctures were prepared by the use of spirits.

Inspector Dexter swore that Vin Mariani was for sale as a beverage in saloons. He had seen it. He admitted that that did not necessarily make it an offence for druggists to sell it.

Lawrence A. Wilson, agent in Canada for Vin Mariani, testified that Vin Mariani contained pure wine and erythroxylin-coca leaves, from Peru. There was about 6 per cent. of coca in it. It was not a beverage, but purely a tonic, and could not be used as a beverage. No spirits whatever were added. There was the natural strength of the wine only. A wine less pure and strong would not hold the coca in solution. The wine was not added necessarily to make it palatable. The elixir was made from the leaves first and afterwards diluted with natural wine. Mr. Curry wanted to know if alcohol could not be used for the same purpose, and Mr. Wilson replied that while it might the preparation could not be offered to the public in that form. Twenty-five years of experience had shown that the preparation was most acceptable to the medical profession in its present form. The same alcohol that preserved the wine preserved the coca. Water would not do as it would destroy the medicinal effect. Witness considered coca just as dangerous as strychnine if taken in too large doses. People who acquired the cocaine habit did not follow the proper formula.

Professor Shuttleworth, professor of materia medica in Trinity College, testified that it would be wrong from a Pharmacopœia standpoint to prepare the elixir of coca with water. Water was not a good solvent, and would not have the proper action on the coca. He would class Vin Mariani as a medicine and not as a beverage. He had known physicians prescribe it. Mr. G. E. Gibbard, druggist, and Mr. Francis H. Holgate, manager for the defendants, testified that they sold this wine, as a medicine on physicians' prescriptions. Dr. J. E. Graham, Mr. A. Jukes Johnson (coroner for Toronto), Dr. William Nattress, Dr. J. O. Orr, Dr. W. H. B. Aikins, and Dr. J. E. Elliot stated that they frequently prescribed this wine and regarded it as a *bona-fide* medicine.

The counsel for the defence argued that if this were held to come within the law all tinctures were equally liable, and a circular letter issued from the office of the Attorney-General to the licensing inspectors was produced, in which it was stated that it was not the intention to interfere with the sale of proprietary articles simply because they contained alcohol.

The Magistrate said he had no doubt from the evidence

that the wine was a good tonic, but he had to administer the law as he found it. He adjourned the case for a week.

SALE OF FOOD AND DRUGS ACT.

TINCTURE OF RHUBARB AND EVAPORATION.

At the Rotherham West Riding Police Court on Monday, Sarah Ann Turner, grocer, of Laughton-en-le-Morthen, was summoned for having sold to an inspector of the West Riding County Council 4 oz. of tincture of rhubarb which the public analyst, Mr. A. H. Allen, said contained extractive matter, 4.64; alcohol, 35.35 parts; water, 60.01 parts. These results showed that the sample had only three-fourths of the alcoholic strength of tincture of rhubarb, B.P., and it was besides almost, if not quite, destitute of saffron. Mr. Gichard, for the defence, stated that the article had been in stock for four or five years, and had lost its strength by evaporation. There was no intention to commit a breach of the law. The Bench ordered the defendant to pay costs.

Bankruptcies and Failures.

Re LLEWELLYN VOSPER REES, 11 Woodwell Crescent, St. George's Road, Bristol, Chemist.

A FIRST meeting of creditors in this bankruptcy was held on August 25 at the Bristol Bankruptcy Court before Mr. E. G. Clarke, Official Receiver. Mr. Dixon appeared for the debtor. The liabilities were returned at 82*l.* 4*s.* 7*d.*, and the assets at 53*l.* 0*s.* 6*d.* Preferential claims amounted to 20*l.* 11*s.* 6*d.*, leaving a deficiency of 49*l.* 15*s.* 7*d.* The debtor had been in business for three years and eight months, commencing with 150*l.* borrowed money. He attributed his failure to illness of himself and child. The assets, stock-in-trade, and such fixtures as belong to the estate, had been sold by valuation as a going concern at the amount set out in the statement (49*l.* 14*s.*). The Official Receiver said he understood an offer was to be made at 7*s.* 6*d.* in the pound by the debtor's brother. Mr. Dixon said the debtor's brother had withdrawn the offer, and, therefore, he was unable to make it. Adjudication therefore followed.

Re JOHN WILLIAMS, Pontypool, Chemist.

The debtor came up for his public examination at the Newport Bankruptcy Court, on Tuesday. Debtor started business twenty-two years ago at Usk, purchasing the same for 320*l.*, which he borrowed. In 1834 he removed to Abersychan. On January 4 last he sold his business, together with a branch at Pontypool, to his son, Augustus J. Williams, for 600*l.* This amount, however, has not yet all been paid. It was stated that conditional upon this sum being recovered a surplus of 176*l.* 5*s.* 2*d.* would be available for distribution. Debtor attributed his failure to ill-health, domestic trouble, and the expenses incurred thereby. His liabilities expected to rank for dividend amounted to 423*l.* 0*s.* 5*d.* The examination was adjourned.

Re H. MORTON, of 6 Parade Buildings, Deptford Bridge, Kent, Chemist.

MR. ALEXANDER MACKINTOSH, the Official Receiver for Greenwich, in his particulars of this failure, states that the receiving-order was made on a creditor's petition. An order for the summary administration of the estate has been made. The debtor stated that he commenced business about fourteen years ago, with a capital of about 100*l.*, and that he removed to his present address about nine years ago. The Official Receiver reports that no statement of affairs has yet been lodged, but the debtor states that his liabilities are about 140*l.*, and that his assets consist of stock, which he values at 5*l.* 10*s.*; furniture, 15*l.*; shop-fittings, 10*l.*; book-debts, 5*l.*; and goods out on sale or return, 85*l.* The debtor attributes his failure to illness in his family about two years ago, and severe competition. The debtor has intimated his intention of making an offer of composition; but no offer has yet been lodged. The Official Receiver invites information from creditors as to the debtor's conduct of affairs.

Deed of Arrangement.

Cardwell, Thomas, 222 Chelmsford Road, Bolton, patent-medicine vendor. Trustee, Alfred H. Scampton, 4 and 6 Wool Street, Bolton. accountants. Dated, August 25; filed, August 28. Liabilities unsecured, 212*l.* 17*s.* 8*d.*; estimated net assets, 53*l.* 13*s.* The following are scheduled as creditors:—

	£	s.	d.
Bourne, Johnson & Latimer, London	13	0	0
Bullough, Charles O., Bolton	33	0	0
Ellis, Crompton & Co., Bolton	10	0	0
Fox, S., Stoneclough	10	0	0

Gazette.

PARTNERSHIPS DISSOLVED.

Phillips, S. G., Hoskins, W. C., and Phillips, F. T., under the style of Phillips, Hoskins & Co., Bristol, soap-manufacturers.

Roberts, A., and Rows, R. G., Reading, physicians, surgeons, apothecaries, and general practitioners.

THE BANKRUPTCY ACTS, 1883 AND 1890.

RECEIVING ORDER.

Wilkinson, J. D., and Miles, Isaac (trading as the Star Mineral-water Company), High Street, Shadwell, E.

ADJUDICATIONS.

Rees, Llewellyn Vosper (trading as Rees & Co.), Bristol, chemist.

Mayall, Derbyshire, Manchester, and Stretford, chemical merchant and drysalter.

ORDERS MADE ON APPLICATIONS FOR DISCHARGE.

Ottey, Percy John, Barton-on-Trent, chemist and druggist—discharge suspended for three months, ended June 3, 1897.

Smith, Thomas William Toone, Market Street, Mayfair, W., surgeon—discharge suspended for two years, ending August 3, 1899.

PETITION FOR SEQUESTRATION.

Rait & McNicol, 362 and 154 Dumbarton Road, Partick, chemists and druggists, and John McNicol, sole partner, as such, and as an individual, August 26. Agents, Borland, King & Shaw, 142 St. Vincent Street, Glasgow.

Business Changes.

Notices of changes in the retail trade, and opening of new businesses, are inserted in this section free of charge, if properly authenticated.

MR. J. PEMBERTON, chemist and druggist, has commenced business at the London Pharmacy, Central Promenade, Herne Bay.

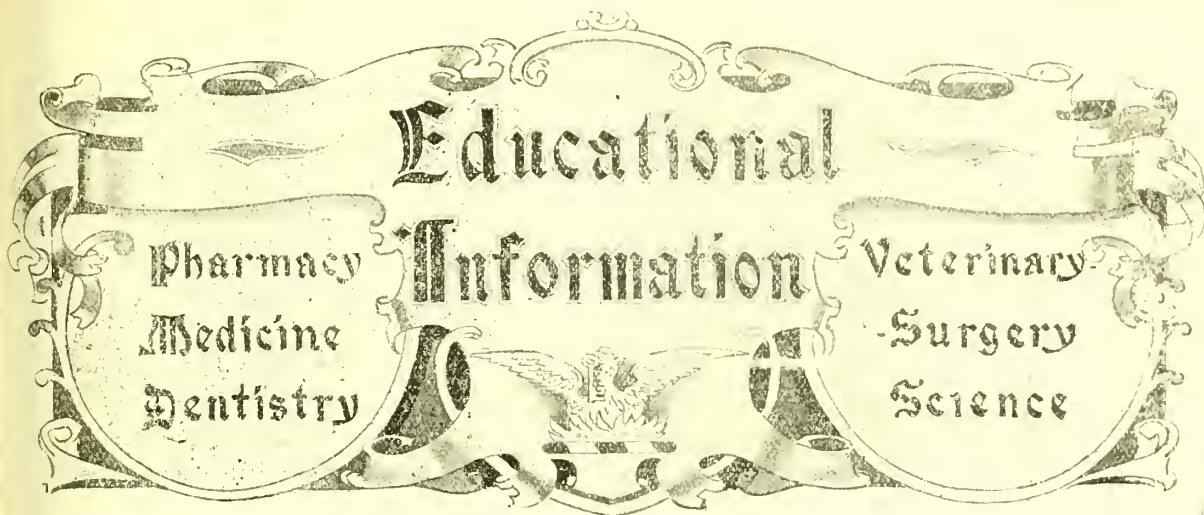
MR. GEORGE E. DAVIES, from Messrs. Savory & Moore London, has succeeded Mr. Brassington, at Moseley, near Birmingham.

MR. WILLIAM KEMP has purchased the business at 3 High Street, Inverness, carried on during the past half-century by Mr. David Macritchie.

MR. H. E. THOMPSON has disposed of his business at 431 Moseley Road, Birmingham, to Magor (Limited), and is now travelling for Messrs. Southall Brothers & Barclay. He was formerly in business at Hull for six years.

MR. J. SCOTT TATE has purchased the business of Messrs. Allan & Co. at 27 Grosvenor Road, Tunbridge Wells, and will carry it on as a cash pharmacy, supplying patent medicines and proprietary articles at Army and Navy Store prices.

THE following is said to be the announcement in the window of a country druggist: "Besides selling our goods at store-prices, and sometimes less, we offer our customers the services of our resident dentist at reduced rates. Teeth extracted whilst you wait at 10½*d.* each, or 9*s.* the dozen."



PHARMACY.

OUR yearly publication of information regarding the examinations which must be passed before one can practise pharmacy in its entirety in Great Britain throws into strong relief how small is the change which actually occurs from year to year. The Minor examination schedule is little different (although more lengthy) from what it was ten years ago, and the Preliminary requirements are practically the same as they were twenty years since. Yet there are differences, and for that reason an annual Educational number of *THE CHEMIST AND DRUGGIST* has become a necessity. Moreover, year by year there enter pharmacy about 1,000 persons, many of whom have the vaguest idea as to the conditions which they must fulfil before they can obtain registration as chemists and druggists. In a measure the same obtains in Ireland, where pharmacy is governed by laws distinct from those of Great Britain, and it behoves all who are connected with the drug-trade to acquaint themselves with the conditions. The object of the present article is to give the particulars as concisely as possible, with fuller information regarding the education required and the examinations to be passed.

GREAT BRITAIN.

In the thirty-second year of our Queen's reign an Act was passed "to regulate the Sale of Poisons, and alter and amend the Pharmacy Act, 1852." It came into force on January 1, 1869. The Pharmacy Act was one which created a title—viz., "Pharmaceutical Chemist," or its equivalent, and confirmed the powers previously granted to the Pharmaceutical Society of Great Britain by charter. The Act was permissive—i.e., no chemist was compelled to pass the Society's examinations unless he wished the title "Pharmaceutical Chemist." The object of the Poisons Act was solely to regulate the sale of poisons, and the first thing done in that was to place the sale in the hands of competent persons. Who were competent persons? The Act said "all who are now in business on their own account." These persons were registered there and then as chemists and druggists, and the future was provided for by (1) permitting those who were assistants at the passing of the Act to register, under a modified examination, and (2) making all who came into the trade thereafter pass the examination for assistants (the "Minor") provided for by the 1852 Act. The effect of all this was to create a registered class of retailers called "Chemists and Druggists," and to them was the sale of poisons entrusted.

For many years after the Poisons Act was passed, it was considered that if the owner of a shop in which poisons were

sold was qualified the assistants in the shop need not be, and might sell poisons under cover of the employer's name; but the High Court of Justice has held this view to be erroneous, and no one who is not registered may sell even one pennyworth of oxalic acid or red precipitate ointment unless a registered person is present supervising the sale. The vested rights of certain persons are, however, recognised—viz., registered medical practitioners, who are in all respects on a footing with chemists and druggists, and registered veterinary-surgeons, who are permitted to supply poisons for animals under their care.

These, generally, are the conditions created by the State for the sale of poisons in Great Britain, including Orkney and Shetland, but excluding the Isle of Man and the Channel Islands. Those who wish fuller particulars should consult "The Pharmacy and Poison Laws of the United Kingdom" (C. & D. office, 2s. 6d.). The details of registration are entrusted to the Pharmaceutical Society and the Privy Council, and the following are the regulations at present in force:—

Any person (male or female) who desires registration must

- I. Pass a Preliminary examination.
- II. Be engaged for three years in compounding physicians' prescriptions.
- III. Pass the Minor examination after conditions I. and II. are fulfilled, and the age of 21 years is reached.

THE PRELIMINARY OR "FIRST" EXAMINATION.

The subjects of this examination are Latin, arithmetic, and English, so that it should be passed before leaving school, or as soon as possible thereafter. The Pharmaceutical Society does not compel one to pass it at any particular time, although it is insisted that applicants for the Minor shall be registered students, which means that it must be passed at least three months before entering for the Minor. The following is the official schedule of the examination:—

Latin.—Grammar; translation of simple sentences from English into Latin; translation into English from Cæsar, "De Bello Gallico," Book I., or Virgil, "Æneid," Book I. In each examination-paper passages from both of these authors will be given, but a candidate is required to translate from one author only.

Arithmetic.—Numeration; the first four rules—simple and compound; reduction; vulgar and decimal fractions; simple and compound proportion; a thorough knowledge of the British and metrical systems of weights and measures; percentages and stocks. In each examination-paper a question will be given involving a knowledge of the metrical system, which every candidate will be required to attempt.

English.—Grammar and composition. In awarding marks, spelling and the quality of the handwriting are taken into account.

Examination Fee.—2l. 2s.

Examinations are held on the second Tuesdays of January, April, July, and October at the following centres:—

Aberdeen	Darlington	Jersey (<i>in July only</i>)	Northampton
Birmingham	Douglas, Isle of		Norwich
Brighton	Man (<i>July only</i>)	Kirkwall, Orkney	Nottingham
Bristol	Dundee	(<i>July only</i>)	Oxford
Cambridge	Edinburgh	Lancaster	Penzance
Canterbury	Exeter	Leeds	Peterboro'
Cardiff	Glasgow	Lincoln	Plymouth
Carlisle	Guernsey (<i>in July only</i>)	Liverpool	Sheffield
Carmarthen	Hull	London	Shrewsbury
Carnarvon	Inverness	Manchester	Southampton
Cheltenham		Newcastle	York

The next examination will be held on October 12, and in 1898 on January 11, April 12, July 12, and October 11.

Applications for Admission must be made and the fee paid, at least fourteen days before the examination is held, to Mr. Richard Brembridge, 16 Bloomsbury Square, London, W.C. It is advisable to get an application-form from him before that.

If One Fails to Pass he or she is admitted for re-examination within a year for a fee of 1*l.* 1*s.*

Exemptions.—Degrees in arts and the matriculation or entrance examinations of British Universities are accepted in lieu of the Preliminary examination; also the Oxford, Cambridge, Durham, and Queen's (Ireland) University local examinations; the preliminary examinations of medical qualifying bodies in the United Kingdom, the College of Preceptors' first and second certificates, leaving certificates (first class) of the Scotch Education Department, and those of the Irish Intermediate Education Board, as well as others, provided, in all cases, Latin, arithmetic, and English are included, and have been passed at one examination. Any foreign or colonial certificate covering these requirements may be specially accepted. The fee of 2*l.* 2*s.* must be paid. Mr. Brembridge will supply particulars.

The questions given in the examination are selected by the College of Preceptors, who also adjudicate the answers of candidates. The examination is wholly in writing, and begins at 11 A.M. with Latin; at 12.30 P.M. the answers are collected, the arithmetic questions given out, and at 2 o'clock the answers to these are collected. After an hour's interval for lunch candidates return for the English paper, 3 to 4.30 being allotted for it.

All who are preparing for the examination should get Dodds' "Guide to the Pharmaceutical Preliminary Examination" (*C. & D.* office, 2*s.*; post free, 2*s.* 3*d.*), which gives sound advice as to the manner of preparing for the examination, and contains a complete analysis of ten years' sets of questions. Mr. Dodds communicates an article to this issue on "The Management of an Examination-Paper," which should be read by all. The questions set at the examination are published in *THE CHEMIST AND DRUGGIST*, and copies can be obtained from the publisher at 4*d.* per copy.

HINTS TO STUDENTS.

Suppose the apprentice has passed the Preliminary examination or its equivalent, before or very soon after he enters the trade, he may wonder what he can do to push himself on towards the Minor. As a matter of fact, comparatively few give the thing a thought, and many employers seem to take no interest in how their apprentices spend their spare time. We should like to improve matters a bit, so give here a few hints which may be good for both.

The shop is ever the backbone of the chemist and druggist's knowledge. It is there that he first handles the majority of things which the examiners question him about, for the object of the Minor examination is really to determine whether the candidate's experience is sufficient to justify him taking charge of a pharmacy. That experience is "shop" and scientific, but the shop comes first. During the first year or two of his apprenticeship the young student of pharmacy needs all his wits to learn the common routine of the business, and after the gilt is taken off the gingerbread he frequently loses any inclination he may have had for reading, and in consequence the whole of the apprenticeship may pass without any other knowledge being acquired except that picked up in the shop. This is exceedingly prejudicial to future progress, and we warn young apprentices about it at the outset. Hard grinding is not required during the apprenticeship, but it is good to do a little reading systematically.

The first thing is to get a "British Pharmacopœia," and try if possible to read a little of it every day, with the

object of ascertaining what the medicines are, where they come from, or how made, and so on. It is not at first very informative reading, because the student knows nothing, or little, about botany, chemistry, and materia medica; but it is not valueless reading by any means, and as one progresses he finds that the subject is the centre of all the science that he has yet to acquire. In this first perusal of the B.P. no attempt should be made to elaborate—*i.e.*, to get the technical explanations of this or that—for until the student has learnt some science he cannot grasp the elaborations. It would just be as reasonable to expect a child to take in dogma with his first reading of the Bible as to ask a druggist's apprentice to master the technicalities of the B.P. the first time. The B.P. is the druggist's bible, the first volume for his library. What the second may be depends much on circumstances. Sometimes a few seconds at an old bookstall gives the apprentice his bent; it may be a book on chemistry or botany that he picks up, anyway the time spent on reading it is not lost; but for systematic reading we should recommend Macmillan's science primers—botany, chemistry, and physics—as the next additions to the apprentice's library—*i.e.*, if he has not studied the subjects before; after that Southall's "Materia Medica," which is interesting from cover to cover; and "The Art of Dispensing," which will tell him all that he wants to know about the compounding of prescriptions.

As the taste for the science-subjects of the Minor increases, an effort should be made to attend evening or other classes in the subjects. There are few towns in Great Britain where elementary chemistry (inorganic and organic), botany, magnetism and electricity, sound, light and heat, and animal physiology are not taught under the auspices of the Government Science and Art Department, and we strongly urge upon apprentices the necessity of beginning to attend these classes before their eighteenth birthday. They mean no more than two or three hours per week, and the cost is trifling, but the knowledge obtained is a splendid groundwork for special minor studies. We could say much more upon this subject, but the virtue of it is already expressed, and it is universally agreed amongst examiners that brilliance and success in the examination-room depend upon the use that apprentices make of their time before they are 20.

THE MINOR EXAMINATION.

This examination is one of the most onerous of modern times, not that it is terribly searching, but because it contains six subjects, and candidates must show a certain ability in each of them at one time. That is why early studies are of value—the knowledge is assimilated well, whereas, in a hasty three-months' course immediately before the examination, it is difficult to take in all that is necessary.

We have already stated that none can enter for the examination who have not passed the Preliminary examination, served three years in compounding prescriptions, and are 21 years old. The following are the particulars of the examination supplied by the Pharmaceutical Society:—

Chemistry and Physics.

The candidate will be expected to possess an *elementary* knowledge of the following subjects:—

(a) The law of the conservation of energy; the law of gravitation; the balance; specific gravity; atmospheric pressure; the barometer, air-pump, and syphon; the law of Boyle; temperature; thermometer; the law of Charles; the law of gaseous diffusion; V. Meyer's method for determining vapour densities.

(b) The chief characteristics of chemical action, the distinction of elements and compound; the laws of chemical combination by weight and volume; the hypothesis of Avogadro; atomic weight and molecular weight; chemical formulae and nomenclature; valency; the distinction between metals and non-metals.

(c) The general characters of the non-metals; the chief methods of preparation and the typical reactions of the following non-metallic elements and compounds:—Hydrogen, oxygen, ozone, water, peroxide of hydrogen; chlorine, bromine and iodine, and their compounds with hydrogen and oxygen; fluorine, hydrofluoric acid; nitrogen, ammonia, the oxides of nitrogen, nitrous acid, nitric acid; sulphur, sulphuretted hydrogen, sulphurous and sulphuric anhydrides and acids, thiosulphuric acid; phosphorus, phosphine, the oxides and oxy-acids of phosphorus, the chlorides of phosphorus; silicon, silica, fluoride of silicon, silicofluoric acid; boron, boric acid. The usual impurities in those of the

above-named substances that are included in the British Pharmacopœia.

(8) The general characters and classification of the metals, and the general methods of forming oxides and salts; the sources, the usual methods of extracting, and the chief properties of, the undermentioned metals, and the principal modes of preparation, properties, adulterations, and contaminations of such of their compounds as are described in the British Pharmacopœia:—Potassium, sodium, ammonium, lithium, barium, calcium, magnesium, zinc, aluminium, iron, chromium, manganese, arsenium, antimony, tin, copper, bismuth, lead, silver, mercury, gold, and platinum.

(c) Carbon, its oxides, cyanogen, hydrocyanic acid, cyanide of potassium, ferrocyanide and ferricyanide of potassium, oxalic acid. The chief methods of preparing marsh-gas, ethylene, alcohol, aldehyde, acetic acid, acetate of ethyl, spirit of nitrous ether, nitrite of amyl, hydrate of chloral, chloroform, iodoform, ether; the principal properties, reactions, and mutual relations of these compounds. The candidate will also be expected to possess a general knowledge of the methods of estimating carbon, hydrogen, oxygen, and nitrogen in organic compounds, and of obtaining molecular formulæ.

Note.—Candidates will be expected to solve simple problems relating to the weight and volume, under different conditions of temperature and pressure, of elements and compounds concerned in chemical reactions.

Practical Examination

To determine the specific gravity of liquids and solids, to be familiar with the general construction and use of the thermometer and barometer.

To recognise by chemical tests the more important non-metallic elements and compounds, as well as the metals and salts indicated in the foregoing list; to detect the chief impurities in those that are included in the British Pharmacopœia; to recognise by their physical properties those which possess well-defined characteristics.

To identify by chemical tests the organic compounds before enumerated, and, in addition, tartaric and citric acids, starch, cane-sugar, grape-sugar, salicin, quinine, morphine, and strychnine; and to detect the impurities in such as are included in the British Pharmacopœia.

To perform those volumetric determinations which are described in the British Pharmacopœia.

To be familiar with the construction and use of the balance, and to have a practical knowledge of the British and metric systems of weights and measures.

To quantitatively determine the total alkaloids in cinchona-bark, and in the tincture and extract of nux vomica, and the morphine in opium.

The candidate will further be expected to have a practical acquaintance with the methods of preparing the more important inorganic substances, including the non-metals and their compounds, and such metallic compounds as are included in the British Pharmacopœia, and also the following organic compounds:—Ether, chloroform, spirit of nitrous ether, nitrite of amyl, acetate of ethyl, and hydrocyanic acid, so that he may be able to explain to the examiner the operations involved in their preparation, and, if called upon, to perform the operations or certain stages of them himself.

Botany.

The candidate will be required to recognise any of the plants specified in the list appended to this schedule; to refer any flowers that may be shown to him to their class and sub-class; to possess a general knowledge of the internal structure of stems, leaves, and roots, and their parts, and of the elementary tissues of which they are composed; to describe a cell, its structure, and usual contents; to explain the thickening of cell-walls, and to describe the manner in which cells are combined to form tissues. To distinguish between roots and stems, and to name such important modifications of either as present distinguishing characteristics. To name correctly such leaf-shapes as are shown, and to recognise appendages or any important modifications of the leaf. To have a practical knowledge of the various arrangements of leaves or flowers in the bud, and of the different kinds of phyllotaxis and of inflorescence; to understand the principles of branching, and the different kinds of branch systems. To possess a general knowledge of the processes of reproduction of plants, and to describe those of phanerogams and ferns. To name and describe the arrangements of the parts of the flower, the number, position, and shape of the floral envelopes, and of the organs of reproduction; to name and describe the different kinds of fruits, and the various modes of dehiscence and kinds of placentation. To have a general knowledge of the physiology of plants, and to describe the functions of the roots, stems, and leaves. To be acquainted with the materials which form the food of plants, and to understand the part played by starch, sugar, and aleurone grains in the life of the plant. To recognise, by means of the microscope, sections of stems of dicotyledonous, monocotyledonous, and cryptogamic plants; spiral,

reticulated, and scalariform vessels; as well as the simpler structures, such as stomata, pollen grains, and hairs.

List of Plants for Recognition.

Aconitum Napellus, Papaver Rhoeas, P. somniferum, Brassica alba, Cochlearia Armoracia, Althœa officinalis, Ruta graveolens, Cytisus Scoparius, Rosa canina, Bryonia dioica, Æthusa Cynapium, Conium maculatum, Foeniculum capillaceum, (Enantiocrota), Valeriana officinalis, Achillea Millefolium, Anthemis nobilis, Matricaria Chamomilla, Taraxacum officinale, Menyanthes trifoliata, Borago officinalis, Atropa Belladonna, Datura Stramonium, Hyoscyamus niger, Solanum Dulcamara, Digitalis purpurea, Lavandula vera, Mentha piperita, M. viridis, M. Pulegium, Rosmarinus officinalis, Daphne Laureola, D. Mezereum, Juniperus Sabina, Taxus baccata, Colchicum autumnale, Arum maculatum, Avena sativa, Hordeum vulgare, Triticum sativum, Aspidium Filix-mas.

Materia Medica.

The candidate is required to recognise specimens of any crude drug mentioned in the British Pharmacopœia or in the annexed list, and to describe their methods of production and their characteristics so far as may be necessary to detect adulteration or substitution. He must be familiar with their geographical sources, the botanical and zoological names of the plants and animals yielding them, the natural orders to which they belong, and the localities from which they are obtained. The candidate will be required to name their chief active constituents and also the official preparations into which they enter.

Roots.—Althœa officinalis, Inula Helenium, Alkanna tinctoria, Bryonia alba et dioica.

Rhizomes, &c.—Helleborus niger, Sanguinaria canadensis, Iris florentina, Allium sativum, Veratrum album, Acorus Calamus, Agropyron (Triticum) repens.

Barks.—Berberis vulgaris, Cinnamodendron corticosum, Simaruba amara, Erythrophleum guineense, Quillaia Saponaria, Prunus serotina, Ulmus campestris, U. fulva, Cinnamomum Cassia, Coto.

Herbs.—Grindelia squarrosa et robusta, Tussilago Farfara, Spigelia marilandica, Marrubium vulgare, Solanum Dulcamara, Euphorbia pilulifera, Convallaria majalis.

Flowers.—Calendula officinalis, Pyrethrum cinerariæfolium, &c., Arnica montana.

Fruits.—Punica Granatum, Cuminum Cymium, Capsicum annuum, Laurus nobilis, Piper longum, Vanilla planifolia.

Seeds.—Paullinia sorbilis (Guarana), Trigonella Fœnugræcum, Dipteryx odorata, Pyrus Cydonia, Strychnos amara, Hyoscyamus niger, Amomum Melegueta, Area Catechu.

Hairs.—Mucuna pruriens.

Juices, &c.—Acacia Catechu, Lactuca virosa (Lactucarium), Aloe spicata, &c., Curare (Woorari).

Gum-Resins.—Boswellia Carteri, &c., Euphorbia resinifera.

Oleo-resins.—Pistacia Terebinthus.

Resins.—Callitris quadrivalvis, Pinites succinifer, Calamus Draco.

Cryptogamic Substances.—Lycopodium clavatum, &c., Fucus vesiculosus, Chondrus crispus.

Animal Substances.—Spongia officinalis, Coccus Lacca, Mylarchis Cichorii, Sepia officinalis, Castor Fiber.

Prescriptions.

The candidate is required to read without abbreviation autograph prescriptions; translate them into English; understand the grammatical construction of the Latin; and render a literal as well as an appropriate translation of the directions for use. To detect errors, discover unusual doses, and have a general knowledge of posology. To calculate percentages and other quantities occurring in prescriptions; also to render in good Latin ordinary prescriptions written in English.

Practical Dispensing.

To weigh, measure, and compound medicines; write the directions in concise language in a neat and distinct hand; to finish and properly direct each package. [In awarding marks in this subject the time taken by the candidate in doing the work is taken into account.]

Pharmacy.

The candidate will be required to possess a general knowledge of the following branches:—

(a) Operations requiring the use of heat. Evaporation, with particular reference to the preparation of extracts and inspissated juices; special characters and modes of preparing the various classes of extracts; influence of surface, temperature, and pressure upon the rate of evaporation; water, steam, and sand baths; distillation, ordinary, fractional, and destructive, distinctive characters and objects of each; official preparations illustrating the various kinds of distillation, apparatus employed, the retort and receiver, still and worm, Liebig's condenser, principles on which they are constructed and used. Sublimation: its objects

and applications in pharmacy; official products of sublimation, calcination, and fusion. Desiccation; temperature best suited for drying particular drugs, loss in drying vegetable drugs, forms of drying-ovens, principles on which they are constructed and used.

(B) Disintegration of solid substances; cutting, bruising, and pulverisation; apparatus employed, principles indicating which is to be adopted in particular instances; methods for controlling the degree of comminution, sieves and sifting, trituration, levigation, elutriation, granulation, including methods for producing certain chemicals as fine powders, small crystals, scales, &c. Solution: its nature, solvent power of various menstrua, influences of (a) temperature; (b) state of division of the substance to be dissolved; (c) time; (d) position of the substance in the menstruum; lixiviation, infusion, digestion, and decoction; maceration, percolation, and displacement, principles on which the successful performance of these processes depends; form and materials for percolators and other vessels employed. Filtration, objects and methods, filtering media, means of expediting filtration; dialysis: its application in pharmacy, construction and use of the dialyser. Expression: methods of obtaining the juices from plants; recovery of the residual liquids from tincture-marks, &c.; screw, hydraulic, and other presses. The principles involved in the dispensing of medicines, particularly with reference to the best excipients and methods for forming pill-masses, the preparation and nature of emulsions, the most suitable emulsifying agents, and the best means of suspending insoluble substances in liquids.

(7) The candidate will also be required to show a practical knowledge of the processes, and understand the principles of the processes, by which the official preparations belonging to the following classes are made, viz.:—Collodions, confections, decoctions, dilute acids, extracts (solid and liquid), glycerines, infusions, juices, liniments, lotions, mixtures, ointments, pill-masses, plasters, powders (simple and compound), solutions, spirits, suppositories, syrups, tinctures, vinegars, waters, and wines. He must be able to conduct such of the operations, or parts of them, as may be required by the examiner. A knowledge of the proportion of active ingredients or crude material in official preparations containing aconite, antimony, arsenic, belladonna, Calabar bean, cantharides, hydrate of chloral, chloroform, caustic potash and soda, colchicum, digitalis, elaterium, ergot, iodine, iodoform, ipecacuanha, lead, mercury, nux vomica, opium, phosphorus, scammony, stramonium, squill, alkaloids, and alkaloidal salts.

Poisons.

Candidates will be required to enumerate the poisons contained in Schedule A of the Pharmacy Act, 1868, and those since added thereto, in pursuance of the provision contained in section 2 of that Act, viz.:—

- (a) Poisons within Part I. of the schedule.
- (b) Poisons within Part II. of the schedule.

They will be required to describe minutely the conditions required upon the sale by *retail* of poisons, both in Part I. and Part II. of Schedule A.; and to write the proper entry required, according to Schedule F of the Act, for the sale of a poison coming within Part I. of Schedule A. They will also be required to state the conditions imposed on the sale of scheduled poisons *by wholesale and for export*; and upon the sale of a scheduled poison when forming an ingredient in a medicine dispensed.

A knowledge of the conditions imposed on the sale of arsenic by the Arsenic Act will also be required.

Note.—Candidates must not take into the examination-rooms or laboratories any books or any notes or memoranda, whether written or in print.

The Examination is held quarterly (January, April, July, and October) at Galen Place, Bloomsbury, London, W.C., and 36 York Place, Edinburgh. Each candidate is examined practically in chemistry (three hours), and dispensing and pharmacy (three hours), and if he pass in these subjects he proceeds a few days later to the oral examination.

The Fee for the Examination is 5*l.* 5*s.*, which must be paid to Mr. Richard Brembridge, 16 Bloomsbury Square, London, W.C., not later than the 15th of the month previous to that in which the examination is to be held. Application forms should previously be obtained from him, one of these being a form of declaration regarding three years' compounding, which has to be signed by a pharmaceutical chemist, chemist and druggist, or medical practitioner. The fee for re-examination within a year after failure is 3*l.* 3*s.*

The examinations are commenced a few days after the last day of entry. There are two boards, one for England and Wales, the other for Scotland, but both work in harmony, and their examinations are practically identical. On the English board are four professional (*i.e.*, non-pharmaceutical) examiners who examine in botany and chemistry,

in Edinburgh one for each of these subjects. The other members of the boards are pharmacists. The best idea we can give of the examination is to print a description of it by a recently successful candidate.

THE EXAMINATION AS IT IS.

Having paid my fees I receive notice to present myself at Galen Place at 9.40 A.M. on a certain day early in April. I duly made my appearance, and found some sixty other unfortunates all in a state of suppressed excitement and nervousness.

Upon the doors being opened we were shown into the large examination-room, in which were a number of small tables. Two candidates were placed at each table, and we were told to address an envelope provided, in which the result of the first day's examination would be posted to us subsequently.

We were then divided into three parties, two of which went to dispensing, and the third to practical chemistry. I was in one of the dispensing parties, and with some dozen others I was shown into one of the dispensing-laboratories, which was quite an ideal little pharmacy.

At exactly 10 A.M. the presiding examiner dealt us out our prescriptions, which were all written entirely in Latin. Having carefully read them through, I immediately began work. Time is taken into account when awarding the marks.

My first prescription called for two dozen pills containing ferri sulph. exsic., pulv. rhei, pulv. capsici, and ext. nuc. vom. Although there was nothing very alarming in these, yet they proved to be very crumbly and stubborn, but with the aid of a little syrup and patience they yielded to the will of the manipulator. The next item was an emulsion containing ext. filicis liq. 3*vj.*, aq. ad 3*vj.* I used 3 dr. of pulv. gum. acaciae and proceeded sec. artem, and procured a beautiful result, which seemed to please the examiner, especially as some of my fellow-candidates came to grief over this performance. Then followed half-a-dozen ext. opii suppositories, which in due time came out satisfactorily. Then 6*il.* oz. of a percentage solution of boric acid had to be made, which of course entailed careful calculation, counting 437½ gr. to the fluid ounce, and not 480 as some men do, either from carelessness or ignorance. This little error cost more than one man his examination this very month. Finally I had to make 6 dr. of pil. hydrarg., B.P., and when I had done this the clocks were striking 1 o'clock. Time was called, and I adjourned to get some lunch with some of my pals. This lunch must be a profitable business for the provider, for the appetite is not very brisk in the middle of an examination.

At 2 P.M. we started for three hours' work in the chemical laboratory. Here also everything was arranged most conveniently. A fair variety of work was divided amongst the candidates. All had a separation of two salts to do, and also an estimation or standardisation of a solution, or perhaps both, while some had some specific gravities to do, such as the sp. gr. of small crystals of sugar. Others had to ascertain the strength of a diluted spirit by determining its sp. gr. and then calculating by means of tables provided.

At 5 P.M. those who had not previously finished had to stop work, wend their way homewards or diggingswards to await the report of their first day's work, which they would receive by post.

In due time I heard that I was safe so far, and was to again present myself at a certain time on a certain day. I reappeared, and met many of my previous companions, but our numbers were considerably diminished. We were again shown into the large examination-room, but this time it was arranged a little differently. A number of chairs were placed in front of the President's desk, and we had to sit on these to wait our turns. To right and left were some of the tables before mentioned, on which were a number of specimens, bottles, flowers, microscopes, prescription-books, according to the subject, with an examiner at each. There were two examiners for each subject, and four for chemistry.

My first subject was *materia medica* with Mr. Holmes, and after a good trial of my abilities, such as can only be understood by those who have been under this worthy gentleman. I was sent rejoicingly to pharmacy with Mr. Arkinstall, and was equally successful. Then came the test which tries most fellows to their utmost—namely, chemistry. I was allotted to Mr. Lucas, who dragged me unmercifully from one end of the subject to the other and back again till I was nearly exhausted.

Starting with acetic acid, we got on to destructive distillation in detail, then we discussed creasote, carbolic acid, wood-naphtha, methane, acetone, carbon and its oxides, phosphorus, nitrogen, ozone, peroxide of hydrogen, and many other things, finishing up with a calculation on chloroform and chlorine.

I was next despatched to Latin, prescription reading, and B.P. doses, and lastly to botany, in which I was first given a number of flowers to describe and classify, then a few slides under the microscope to identify, and, lastly, a cross-examination on assimilation and transpiration.

Having completed the round I had to wait till my marks were added up, and you can imagine my delight when the President called me up to shake hands and congratulate me. He hoped he would meet me again at the Major, which time alone will prove.

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Before proceeding to give some hints as to final preparation for the Minor, we shall dispose of

THE MAJOR EXAMINATION,

the original qualifying examination for membership of the Pharmaceutical Society, and which gives the title "Pharmaceutical Chemist," or "Pharmacist," &c. It is voluntary, and scarcely one in ten of those who pass the Minor afterwards pass the Major. The fact is it is somewhat anomalous, for the Major in force before 1869 was not nearly so searching an examination as the present Minor; while the Major now in force has little pure pharmacy about it, and simply demands a more extended knowledge of chemistry and physics, botany and materia medica. The subjoined particulars will serve to show the nature of the examination:—

CHEMISTRY AND PHYSICS.—The candidates are expected to know the more important facts regarding the physical conditions of matter, and in regard to the sciences of heat, light, magnetism, and electricity. The fundamental principles of chemistry must be learnt, as well as the chemistry of carbon compounds, their constitution, &c., especially cyanogen derivatives, hydrocarbons, paraffin derivatives, and benzene derivatives. Specific substances are named in the schedule. He must also understand the processes of alcoholic, acetic, lactic, and ammoniac fermentation. The properties and decomposition products of the principal glucosides, alkaloids, and other substances of definite chemical composition in the British Pharmacopœia. In the Practical examination the candidate is expected to be able to analyse mixtures containing three metallic salts; to estimate the nitrogen in organic compounds by the soda-lime process; to determine melting and boiling points; to perform the operations (or certain stages of them) necessary for the preparation of cyanogen, artificial urea, ethyl chloride, iodoform, ethylene, and other similar compounds; to recognise by their chemical reactions, and to determine, where necessary, by the pharmacopœial gravimetric or volumetric methods, the strength and purity of the most important of the B.P. inorganic and organic compounds; to detect and separate the most important alkaloids, alkaloidal salts and glucosides, and to separate in the pure state morphine from opium and strychnine from nux vomica. Standard works of reference are provided. No other books or memoranda are allowed.

BOTANY.—A thorough knowledge of the physiology of plants is expected, a more complete knowledge of morphology and histology than in the Minor, and practical knowledge of classification, as well as familiarity with the microscope. The last-mentioned subject includes recognition of tissues, cell-contents, &c. The following are the natural orders with which candidates must be familiar:—Ranunculaceæ, Papaveraceæ, Cruciferae, Violaceæ, Malvaceæ, Rutaceæ, Leguminosæ, Rosaceæ, Cucurbitaceæ, Umbelliferae, Dipsacæ, Convolvulaceæ, Gentianaceæ, Solanaceæ, Scrophulariaceæ, Labiate, Polygonaceæ, Euphorbiaceæ, Cupuliferae, Salicaceæ, Betulaceæ, Coniferae, Orchidaceæ, Amaryllidaceæ, Iridaceæ, Liliaceæ, and Gramineæ.

MATERIA MEDICA.—A practical knowledge of the methods of estimating the value of important drugs, of distinguishing commercial varieties of the same, and of separating the official active principles. The candidate is also expected to have a general acquaintance with the active constituents of all important drugs, and of the histological structure of the drugs.

THE FEE for the examination is 3*l.* 3*s.* It is held at the same time as the Minor, and is open to those only who have passed the Minor. Written papers are first given, which take two days to answer; and if the candidate passes he proceeds to the Practical examination.

PREPARATION FOR THE MINOR.

One of the tragedies of the examination-rooms is the discovery by many young men who fail there that they have missed four or five years of their lives. The old idea that a

three-months' grind is good enough for the Minor still remains in the trade, and the notion persists that the examination is a test of what one has learnt during the grind. So when men get into the examination-room, and find that, apart from book-learning, importance is attached to little things, such as the making of an ointment, the writing of a label, and the wrapping of a bottle, which they don't do so well as they might, they feel that they have missed something, and that they have themselves to blame for it. We have already said that the education for the Minor begins from the day a boy enters pharmacy, and it would be good for him if he were shown the Minor syllabus, and told, "Before you become a registered chemist you must learn all that. Don't trouble yourself yet about the chemistry, botany, and materia medica, but as you know Latin begin with 'Prescriptions' and take a little of the 'Pharmacy' along with it." How few employers ever do anything of the kind! That is what should be done all the same, and as soon as the apprentice has got through the Pharmacopœia he should get a pharmacy text-book, paste the schedule particulars in it, and get up the alpha, beta, and gamma of it by private reading and as much practice as his daily shop-work affords. The difficulty which most apprentices and assistants have is to see certain of the specified operations done; but these difficulties can be overcome if one tries. For example, in the alpha paragraph of the pharmacy schedule there are few operations which cannot be seen in most towns of 5,000 inhabitants. One can do a water-bath evaporation by placing a soup-plate over a pan of boiling water, letting the bottom of the plate touch the water; with less water in the pan the bath is converted into a steam one. A trayful of sand placed over a gas Bunsen ring makes a sand-bath. A few evaporations of an ounce of simple syrup on the water, steam and sand-baths will show one the relative smartness of the respective baths, and these extemporised operations will illustrate the principle—which is the main thing. It is possible to go further than this. The writer, as an apprentice, became familiar with steam-pans by helping a local confectioner in a friendly way to make jams and boiled sweets. The making of red-currant jelly in the factory served as a good example of the extraction of vegetable juices—there were the press, the strainers, and the evaporating-pans, and an effort of the imagination made extract of henbane. Hundreds of apprentices throughout the country may do the same thing, if they care to—and it all comes in useful. Distillation is the next thing in the paragraph. Who cannot do that? The apparatus can be improvised easily—an oil-can, cork, glass-tubing, and tin biscuit-box (for the condenser) are all that is needed for ordinary distillation. Put a tube into the cork, bend it, bore a hole at the top of the box-side and one at the bottom, push a long tube through, and fix it in with putty, so as to make the box watertight; fill the box with cold water, fit the tube to the one in the cork by means of a bit of rubber-tubing, and everything is ready for starting a distillation. The same apparatus will do to illustrate destructive distillation, some sugar or sawdust being placed in the oil-can, and by collecting the distillate in fractions an idea of what fractional distillation means may be impressed upon the memory, because on taking the specific gravity of the fractions, smelling them, and testing them with litmus-paper, differences are observed, and the object of fractional distillation is to separate different bodies. So we might go through the whole of the schedule and show how it is possible for everyone in the trade, favourably or unfavourably situated, to learn everything practically. Our object would be defeated, however, by explaining all, as that object is to incite the student to exert himself, to educate himself. We also write this as a warning that books should not be solely relied upon. Many a man goes in for the Minor who can tell the examiners well how a thing is done, and when they are told, "Do it," they break down because they have never tried before, and no man who has ever done a thing even in a rough way does that. He at least makes a good attempt. What is true of pharmacy also applies to dispensing. If a student is so unfortunate as to be in a business where little dispensing is done he should work through the "Art of Dispensing" in his spare time, and help a local doctor's dispenser if he can arrange that—it may be rough dispensing, but it gives facility in work, which is one of the rarest things seen in the examination-room.

The study of the scientific subjects may be pursued in spare hours and solely from books, but we strongly urge the advisability of taking advantage of local science classes. As materia medica is seldom so taught, the student should read up this subject with the aid of a collection such as the admirable one which Messrs. Southall Brothers & Barclay put on the market. A few students sometimes club together to get such a collection and a herbarium. The study of botany is a perfect nightmare to many. This is largely owing to the fact that they *read* but do no practical work whatever. What is practical work? Well, when one reads about leaves, he should have some leaves beside him and compare the specimen with the description so as to thoroughly understand what the description means. If one reads about a tissue he should have his microscope beside him and examine a bit of such tissue. In our experience it takes two or three summers' work to get up the Minor botany anything like well; it is a slow process, and the reading requires a great deal of digestion before it is assimilated. Field-work and microscopic work should be undertaken whenever there is an opportunity; it is the lack of it which compels a large number of pharmacy students to resort to the mnemonic method of learning botany. We happen to have an example of this method in an amusing paper from a contributor (196/11) which we now print:—

The New Botany.

The study of botany may be made a pleasure instead of a very severe task, as it undoubtedly is to the majority of pharmaceutical students. The *modus operandi* to be pursued depends upon the application of the principle of the "association of ideas" to this branch of science. It is surprising how much information may thus be pleasantly and permanently acquired. It is an inexhaustible source of amusement to the student, and the most trivial everyday occurrence may be utilised as an aid to the memory.

While enjoying the usual post-prandial pipe—a habit indulged in by the majority of students, although many have no idea of its solace (N.O. *Solanaceae*). The latter invariably associate tobacco with *bil(e)ocular* irritation, and a decided tendency to double up—in fact, to assume a *campylotropus* attitude. The fact of tobacco being kept in a pouch suggests that the seed is enclosed in a sort of pouch—*capsule*—and every aspiring botanist should know that this capsule, like the varieties of pouches familiar to him, has different modes of *dehiscence* in the N.O. *solanaceae*. To enjoy a smoke the pipe should not be juicy—a desideratum which easily suggests the absence of milky juice, characteristic of this order of plants. The bowl of the pipe suggests the form of the flower peculiar to the *solanaceae*. Smokers are usually more sociable than non-smokers. There is a sort of masonry among the devotees of the fragrant weed which makes the brotherhood of the pipe, almost, so to speak, *syngenesious*, like the anthers of *nicotiana*. Non-smokers are invariably a bilious lot of folk. They should shake off this mortal coil with the aid of *Atropa belladonna*, and get decently buried (berry) as soon as possible.

Castor oil is not a useless purge (s'purge). The word "purge" immediately suggests the class from which it is derived. It also suggests constipation—constipation, a torpid liver, in all probability—torpid liver, mercurials (*mercurialis*) and light diet—e.g., tapioca, milk and soda-water. The latter suggests syphons, and so we arrive, by the exercise of scarcely any mental effort, at *siphonia elastica*, or the rubber-plant. Still pursuing the association, rubber leads us to think of cards—cards, nap. Nap involves us in *lucere* (*involvere*); each player with a hand of five cards, and all sighing (*cyathium*) for "Kitty," the central object of attraction! "Kitty" always consists of three cards—a trilocular ovary, in fact. It only remains to be stated that it is not wise to be too *cocci* as to the result, or you may be obliged to carry uncle (three balls)—*caruncle*—any superfluous effects in your possession. Here you have the peculiarities of the spurge family, otherwise difficult to remember, presented in a way easy of mental digestion.

The student who is fond of apples may utilise the simple act of eating one to considerable scientific advantage. Apple-eating suggests the fall of our first parents, which brings his Satanic Majesty into the field of association, and suggests the fact that the apple is not a true fruit—*ergo*, it must be spurious, and, like the reasoning used by his Satanic Majesty aforesaid, bollow at the base. Indeed, a transverse section would have convinced Adam that the *loculi* point to the exterior—of the garden. This peculiarity, as we should expect, is not found in allied fruits—e.g., the pear. Every small boy knows that an apple has a core (*coriaceous*). The fact that the stipulations (*stipules*) attached to the eating of the tree were not adhered to suggests their *deciduous* nature, and that the "fruit" is a *sorosis* is evident, since all our sorrows came by Adam's weakness in eating it.

There are a few geniuses in the trade who can sit down and spin out such things by the yard, and students who cannot ad-

mire them and try to do the same. It never strikes them that the geniuses know their subject well before they begin to work the association of ideas trick, and so they blindly follow and get lost sooner or later. Better to recognise at the outset that botany is not a matter of memory, but of *knowing*, and, when the time comes to take a course at a college, things which the student has failed to understand by himself will there be made plain by the teacher. The following official statement may be effectively introduced here:—

The Council of the Pharmaceutical Society recommends that all Candidates before presenting themselves for examination should receive a systematic course of instruction occupying a period of not less than six months; and that such period of study should include *at least* sixty lectures in chemistry, eighteen hours' work in each week in practical chemistry, forty-five lectures and demonstrations in botany, and twenty-five lectures and demonstrations in materia medica.

Schools of pharmacy throughout the country are gradually working towards this ideal, so far as length of time is concerned; but all full courses contain as many lectures as are stipulated, only they are given in thirteen to fourteen weeks, and with the tutorial work in other subjects few but very smart students (which includes those who have had private study for several years) can take it all in. Students should select the school that they are to go to about a year before they enter, and during the year familiarise themselves with the books used in the school. We now give a list of the

BEST BOOKS FOR THE MINOR.

Botany.

- "Manual of Botany" (founded on Bentley's), by Professor J. R. Green. Vol. I. Morphology and Anatomy. 7s. 6d. Vol. II. Classification and Physiology. 10s. 6d. (Churchill.)
- "Practical Botany for Beginners," by Professor Bower. 3s. (Macmillan.)

Chemistry.

- "Elementary Systematic Chemistry," by Professor W. Ramsay. 4s. 6d. (Churchill.)
- "Manual of Inorganic Chemistry," by Dr. T. E. Thorpe. 2 vols. 11s. (Collins.)
- "Manual of Chemistry, Theoretical and Practical," by Professor W. A. Tilden. 10s. (Churchill.)
- "Organic Chemistry," by Drs. Perkin and Kipping. 6s. 6d. (Chambers.)
- Bertholtsen's "Text-book of Organic Chemistry," by Dr. G. McGowan. 7s. 6d. (Blackie.)
- "Elementary Qualitative Analysis," by Drs. Clowes and Coleman. 2s. 6d. (Churchill.)
- "Short Manual of Analytical Chemistry," by Dr. John Muter. 6s. 6d. (Simpkin.)
- "Chemistry: General, Medical, and Pharmaceutical," by Dr. John Attfield. 15s. (Gurney & Jackson.)

Physics.

- "Elementary Text-book of Physics," by Dr. C. G. Knott. 7s. 6d. (Chambers.)
- "Elementary Text-book of Physics," by Professor Everett. 3s. 6d. (Blackie.)

Materia Medica.

- Southall's "Organic Materia Medica," by Mr. John Barclay, B.Sc. 7s. 6d. (Churchill.)
- Scroesby-Jackson's "Note-book of Materia Medica, &c.," by Mr. J. R. Hill and Professor Ralph Stockman. 12s. 6d. (Thin.)
- "Manual of Organic Materia Medica," by Professor J. M. Maisch. 10s. 6d. (Kimpton and other pharmaceutical booksellers.)

Prescriptions.

- "The Latin Grammar of Pharmacy," by Mr. Joseph Ince. 5s. (Baillière.)
- "Selections from Physicians' Prescriptions," by Professor J. Pereira. 5s. (Churchill.)

Dispensing.

- "The Art of Dispensing." 3s. 6d. (THE CHEMIST AND DRUGGIST Office.)

Pharmacy.

- "The British Pharmacopœia" (6s.), and the "Additions" thereto (1s.). (Spottiswoode.)
- Squire's "Companion to the British Pharmacopœia." 12s. 6d. (Churchill.)
- "Galenic Pharmacy," by Mr. R. A. Cripps. 8s. 6d. (Churchill.)
- "Practice of Pharmacy," by Professor J. Remington. 21s. (Burroughs, Wellcome & Co.)

"Pharmacy and Poison Laws of the United Kingdom." 2s. 6d.
(The Chemist and Druggist Office.)

Microscopic Work.

Griffith's "Elementary Text-book of the Microscope." 7s. 6d.
(Gurney & Jackson.)

"Methods and Formulae," by Mr. P. W. Squire. 3s. 6d.
(Churchill.)

The list could be much extended, but even as it stands the student must make a selection from it, and he cannot be wrong in choosing the books first mentioned under any of the

headings. It is a mistake to have too many books on one subject; better to have one for each purpose, and stick to it.

Irish students of pharmacy may take it that the books mentioned are equally suitable in preparing for the Licence examination, but as the principal subjects of that examination must be studied under teachers, it is well to follow their advice in the selection of text-books.

The proposed amendments of the British Preliminary and Minor Examination Regulations will not come into force until 1900, should they be approved.

EDUCATIONAL INSTITUTIONS.

WE cannot give specific advice in regard to the selection of a school of pharmacy. What we write must have general application, and the individual must be guided by these amongst other considerations:—(1) Object, (2) location, (3) means, and (4) time. The best plan is to read the brief particulars which follow, select two or three schools which seem to meet one's requirements best, obtain the prospectuses of the schools, and after considering them decide which will suit. This should be done six to twelve months before entering the school, for the reasons already stated. In all cases we quote the cost of complete instruction for the Minor and Major examinations, but it is sometimes wise to allow a little more for supplementary tuition in one's weakest subjects, which tuition is generally obtained in the evenings from the school assistants; but in the schools where the tutorial method of instruction prevails this is quite unnecessary.

THE SCHOOL OF PHARMACY,

17 Bloomsbury Square, London, W.C.

Staff: Botany, Professor J. Reynolds Green, F.R.S., and Mr. Lloyd Williams; Chemistry, Professor J. Norman Collie, F.R.S., and Dr. A. Lapworth; Materia Medica and Pharmacy, Professor H. G. Greenish, and Mr. Harold Wilson.

The session commences on October 4, and extends to the end of June, 1898, which period is wholly devoted to the course of instruction for the Minor. An advanced course for the Major also begins in October, but it occupies six months only. Students may enter for the complete courses or for individual classes. The subjoined shows the hours at which the classes meet:—

Botany.—Elementary, Thursdays and Fridays at 12 noon. Practical, Fridays, 9.30 A.M. Fee, 5l. 5s. Advanced (Oct.–Dec.), Thursdays and Fridays at 2 P.M.; (Jan.–March), Thursdays at 2 P.M. Practical, Thursdays, 9.30 A.M., to 1 P.M. Fee, 3l. 3s.

Chemistry and Physics.—Elementary, Mondays, Wednesdays and Saturdays at 9.30 A.M. Fee 5l. 5s. Advanced, Mondays, Tuesdays and Thursdays, at 12 noon. Fee 3l. 3s. Practical work, 3 hours daily. Fee (elementary or Minor course) 12l. 12s.

Materia Medica.—Elementary, Tuesdays, 9.30 A.M. Advanced, Wednesdays, 12 noon. Fee, 3l. 3s. for each course, inclusive of the practical class.

Pharmacy (for Minor only).—Mondays and Tuesdays at 2.30 P.M., followed by practical work. Fee 6l. 6s.

The inclusive fee for the Minor is 30l., and for the Major 18l., payable to Mr. Richard Bremridge at the above address.

SOUTH LONDON SCHOOL OF PHARMACY (LIMITED),

325 Kennington Road, London, S.E.

Staff: Dr. Muter, F.R.S., Edinburgh, F.I.C., &c.; Messrs. W. H. Dodd, F.C.S.; W. F. Mawer, F.C.S.; F. Armstrong, L. De Koningh, F.I.C.; and J. Thomas, B.Sc.

Courses of instruction begin in January, April, and September, lectures being given on chemistry and physics, botany, materia medica, latin, and pharmacy (Minor perpetual fee, 5l. 5s.), and practical instruction in qualitative and volumetric analysis, elementary organic analysis, hydrostatics, pharmacy and dispensing, vegetable histology, and pharmacognosy (fee, 3l. 3s. per month). The compounding-fee for the Minor (3½ months) is 12l. 12s., and the same for the Major course, which is held simultaneously.

THE WESTMINSTER COLLEGE OF CHEMISTRY AND PHARMACY.

Trinity Square, Borough, London, S.E.

Principals: Mr. G. S. V. Wills, Ph.C., F.L.S., and Mr. Henry Wootton, B.Sc.; Secretary, Mr. E. Walden.

Courses of instruction for the Minor begin in the first weeks of August, October, January, and April, each being for the examinations three months ahead. Each course is complete in itself, lasts for about twelve weeks, and the fee is 8l. 8s. for lectures and practical instruction in all the subjects. Major courses begin in the first weeks of September, January, and April, fee 5l. 5s. It is right that we should mention that this year's Pereira medallist (Mr. W. A. Knight) was a student at the Westminster College, and he is the only one of the Major men who competed whom the Examiners considered worthy of recognition. As far as we can recollect, the only other Pereira medallist not a "Square man" is Mr. J. E. Saul, who was a student of the Liverpool School of Pharmacy. The principals of the Westminster College encourage the students to go forward to the Major by giving free tuition for it to all who take a six months' Minor course (fee, 12l. 12s.) and pass at the first trial. Evening classes are held at the College on Tuesdays, Wednesdays, and Thursdays, 7 to 9 P.M. Fees, 7s. 6d. to 21s. per class.

THE METROPOLITAN COLLEGE OF PHARMACY,

162 Kennington Park Road, London, S.E.

Staff: Messrs. W. Watson Will, F.L.S., F.C.S. (Principal); George T. Branch, Harry Lucas, and Mark F. Burgin; Secretary, Mr. W. S. Carver.

Apart from a tutorial session for the October Minor examination, there are three complete sessions yearly, beginning September 1, January 1, and April 12, each of 3½ months, and consisting of more lectures and laboratory work than the Pharmaceutical Council prescribes. The fee for one Minor session is 10l. 10s., or 19l. 19s. for two, without any extras; for the special tutorial course, 6l. 6s. The fee for one Major session is 6l. 6s. At this college Sessional examinations are held for prizes, and to test the students' fitness to proceed to the Minor. We are authorised to say that students reading at home may obtain copies of the examination papers from Mr. Carver on application.

THE CITY SCHOOL OF PHARMACY AND CHEMISTRY,

27 Chancery Lane, London, E.C.

Staff: Mr. G. E. Skerry, M.A. (Principal); Messrs. F. A. Hocking, B.Sc., M.P.S.; W. Roberts, M.P.S.; T. Humphreys, B.A.; and — Stewart, M.A.

At this school there are courses of instruction for all the pharmaceutical examinations, (subjects being taught in oral classes, day and evening). Day and evening classes are held, beginning in January and June, the fees being 12l. 12s. and 7l. 7s. respectively for Minor or Major.

IMPERIAL COLLEGE OF CHEMISTRY AND PHARMACY.

51 Imperial Buildings, Ludgate Circus, London, E.C.

Principal, Mr. Frederiek Davis, B.Sc.

The pharmaceutical course of instruction comprises lectures, tutorial advice, and laboratory practice. The ground for the Minor may be covered in three months, but

a course of six months is advised. Fee in either case 10*l.* 10*s.*, whether taken during the day-time or in the evening.

BIRMINGHAM.

Private tuition in all the subjects of the pharmaceutical examinations may be obtained from Mr. F. H. Alcock, Ph.C., F.I.C., Temple Chambers, Broad Street, Birmingham. Fee, 7*l.* 7*s.* per quarter. Tuition is also given by Mr. Stokes Dewson, of the Central School of Pharmacy, 90 New Street, in day and evening classes.

LIVERPOOL UNIVERSITY COLLEGE.

At this College last year a complete course of instruction for the Minor was formulated, and is still available in whole or part. The fee for the complete course (six months, beginning October) is 17*l.* 17*s.* For particulars apply to the Dean, Professor A. M. Paterson, M.D., at the College, Brownlow Hill, Liverpool.

THE LIVERPOOL SCHOOL OF PHARMACY.

6 Sandon Terrace, Upper Duke Street, Liverpool.

Principal, Mr. R. C. Cowley, Pharmaceutical Chemist; assisted by Messrs. H. B. Morgan, Ph.C., and W. Narramore, F.L.S.

Courses of instruction are arranged to meet the requirements of those who can give the whole of their time to the work, and of those who are in situations in the district. Full-time courses for the Minor begin on September 12, and in the first weeks of January and April. Lectures, tutorial, and laboratory work fill up the whole day for three months. Fee 9*l.* 9*s.*, but 1*l.* 1*s.* more for the September course, which is longer. The part-time classes are entirely tutorial, and occupy an afternoon (3 to 10 P.M.) per week, the beginners' class being on Wednesdays, and the advanced class on Tuesdays. Fee, 3*l.* per session of three and a half months. The arrangement is excellent for those who wish to prepare themselves thoroughly and gradually—say, from their nineteenth year. The Major classes are "full time" only. Fee, 9*l.* 9*s.*

THE OWENS COLLEGE, MANCHESTER,

Pharmaceutical Department.

Principal Lecturers—Professor Harold B. Dixon, F.R.S. (chemistry); Professor W. H. Perkin, F.R.S. (organic chemistry); Professor D. J. Leech, M.D. (materia medica); Mr. William Kirkby, Ph.C., F.L.S. (pharmacy and pharmacognosy); and Professor F.E. Weiss, B.Sc. (botany). *Dean*: Professor A. H. Young, M.B.

The courses of instruction in this college are now made similar to those of the Bloomsbury School, the whole of the first year being devoted to studies for the Minor (fee, 17*l.* 17*s.*) and the winter session of the second year to the Major (fee, 15*l.* 15*s.*). Applications for entrance must be made between September 29 and October 15. An entrance exhibition of 10*l.* is offered for competition in October to students entering for the full pharmaceutical course (first and second years). The subjects of the examination will be elementary botany and chemistry. Candidates must give notice to the Registrar (Mr. Sydney Chaffers) before September 20. A prize of 5*l.* will be offered at the end of the winter session, 1897-8, for competition among students proceeding to the Major course.

THE MANCHESTER COLLEGE OF CHEMISTRY AND PHARMACY,

225A and 227A Oxford Street, Manchester.

Director, Mr. Charles Turner, Ph.C., F.C.S.

Courses of instruction for the Minor begin in the first weeks of January and April (fee, 9*l.* 9*s.*) and the second Monday in August (fee, 11*l.* 11*s.*). These courses occupy the whole day from 9.30 to 4.30 (Saturday), the afternoons being devoted to practical work in chemistry and pharmacy. A "once a week class" meets on Tuesdays at 2, when substantially the same work as in the full-time classes is gone through. There are two courses per year from January to July (4*l.* 4*s.*) and August to December (3*l.*). An evening class meets on Mondays, Wednesdays, and Fridays, 8 to 10 P.M.; terms and fees as "once a week." Similar classes to the foregoing for the Major are also held.

THE NORTHERN COLLEGE OF PHARMACY,

100 Burlington Street, Manchester.

Principal, Mr. George Clayton, Ph.C., F.C.S., assisted by Mr. Frederick Lawson, Ph.C.

Minor courses of study commence in the first weeks of January, April, and September; fee, 9*l.* 9*s.*, except for the last, which is 10*l.* 10*s.* The whole day from 9 A.M. to 5 P.M. is devoted to lectures in all the subjects, which are supplemented by "quiz" classes and laboratory practice. Besides the full-time courses, one for evening students is held on Mondays, Wednesdays, and Fridays at 8 P.M. from January to July (4*l.* 4*s.*) and September to December (2*l.* 10*s.*). An afternoon class meets on Tuesdays at 2 and Thursdays at 4; fees same as in evening classes. Day and evening courses of study for the Major are also provided.

THE NORTH OF ENGLAND SCHOOL OF CHEMISTRY AND PHARMACY.

55 Northumberland Street, Newcastle-on-Tyne.

Principal, Mr. George F. Merson, Ph.C., F.C.S., assisted by Mr. J. W. Dewar.

The following are the Minor classes arranged in this school, there being three terms per year, commencing immediately after the January, April, and October examinations:—

A. Full time day class (except Saturdays) from 9.30 A.M. to 4.30 P.M. Fee, 8*l.* 8*s.*

B. Evening class, meeting three times a week from 7.30 to 10 P.M. Fee, 3*l.* 3*s.*

C. Wednesday afternoon class from 2 to 9.30. Fee, 3*l.* 3*s.* A supplementary class is held on Thursday afternoons.

D. A special weekly class for junior assistants and apprentices, commencing in October and terminating in April. Fee, 3*l.* 3*s.* (or 1*l.* 1*s.* per subject).

Mr. Merson adopts the tutorial system of education throughout his courses, students spending as much time as possible in practical work.

SHEFFIELD COLLEGE OF PHARMACY,

118 Princess Buildings, The Moor, Sheffield.

Principals: Messrs. Robert B. Greaves, Ph.C., F.C.S., and J. W. J. Turner, Ph.C.

Five terms are arranged in this College beginning September 6, October 4, January, April, and July. Minor fee, 8*l.* 8*s.*, or 5*l.* for a short course, e.g., September to October examination. Work in the College begins at 9.30 A.M., and lasts to 5 P.M. From the syllabus we quote the following regarding the Minor:—

The practical portion of the examination varies very much at both centres. In Edinburgh special stress seems to be paid to the analysis of simple salts which, by the way, are not always easy when one comes to consider the unbounded range the examiners are apparently at liberty to pick from. Barium chromate, calcium fluorine, silicon oxide, aluminium silicate, barium sulphate, being particularly common. The volumetric work is straightforward. In London the converse obtains. The salts are mostly B.P., but the other portion of the practical chemistry examination is rather more catchy.

An evening class is held on Thursday, commencing on September 23 at 5.30, fee, 1*l.* 12*s.* 6*d.* (chemistry and materia medica only). A second term begins in January.

EDINBURGH ROYAL DISPENSARY SCHOOL OF PHARMACY.

21 West Richmond Street, Edinburgh.

Principal, Mr. Wm. Duncan, Ph.C., F.C.S., assisted by Messrs. W. G. Mackenzie, Ph.C., and C. M. German, Ph.C.

Three terms, beginning in October, January, and April, are arranged each extending to about twelve weeks, and in the course of each the whole of the subjects for the Minor examination are taught from 9 A.M. to 5 P.M. daily, in series of lectures which are supplemented by "quiz" classes and practice in the laboratories and the dispensary. The classes are limited to forty students per term, fee 8*l.* 8*s.* The work for the Major is tutorial and practical, fee 8*l.* 8*s.* Evening classes are held.

EDINBURGH CENTRAL SCHOOL OF CHEMISTRY AND PHARMACY,

26 Clyde Street, Edinburgh.

Principal, Mr. W. B. Cowie, Ph.C., assisted by Messrs. George Senter, Ph.C., G. Malthouse, and A. C. Cameron.

Day and evening classes for the Minor and Major are arranged, and the courses begin in October, January, and April. There are junior and senior courses of study. Minor fees, 8*l.* 8*s.* (day), 3*l.* 3*s.* (evening).

THE GLASGOW SCHOOL OF PHARMACY,

180 West Regent Street, Glasgow.

Conducted by Mr. John Lothian, Ph.C.

Since our last Educational number this school has been transferred to more commodious premises at the same address, and Mr. Lothian, who is a Pharmaceutical Society medallist, takes sole control of it. A full day course of instruction for the Minor and Major begins on October 4 and lasts for six months; fee, 8*l.* 8*s.* per quarter. Shorter courses begin in April and August. Evening classes are also held in the theoretical and practical subjects of the examinations.

GLASGOW AND WEST OF SCOTLAND SCHOOL OF PHARMACY,

157 St. Vincent Street, Glasgow.

Teachers: Messrs. T. Mackenzie, Ph.C.; T. F. Barbour, F.I.C.; and A. M. Ferguson, M.A.

There are three full courses for all examinations, beginning in October 5, January, and April, the fees being 8*l.* 8*s.* per quarter for the Minor or Major. Evening classes for the same examinations are held on Tuesdays, Wednesdays, and Fridays, at 8.45 P.M. Fee, 2*l.* 2*s.* for two nights per week.

Association Arrangements. Ten years ago a large part of the information which we printed respecting pharmaceutical education dealt with arrangements made locally by Chemists' Associations for ensuring that assistants and apprentices should be able to educate themselves. It is an exceedingly pertinent commentary upon the progress of professional schools that up to the time of printing only one local association secretary has replied to our request for information regarding existing arrangements—viz., Mr. James Cox, of Plymouth, from whom we have received the subjoined:—

PLYMOUTH, STONEHOUSE, DEVONPORT AND DISTRICT CHEMISTS' ASSOCIATION.

Summer classes in practical botany by Mr. Reade, from May to September (inclusive). (1) Lectures on morphology and classification every alternate Tuesday, at 8.30 P.M.; (2) field botany every alternate Wednesday afternoon (meeting as arranged). Fee

for the course 2*s.* Prizes are given annually for the best sets of herbaria collected locally.

Winter classes in pharmacy and materia medica are held weekly from October to March (inclusive). Pharmacy, Mr. Reade; materia medica and prescription Latin, Mr. Johnson. Fee for the course, one subject, 4*s.*; both subjects, 7*s.* 6*d.*

The classes are held in the rooms of the Association, 7 Whimble Street; and at the end of each session prizes are awarded by the Association. A good museum and library are also provided for the use of students.

The professional schools now so fully supply the needs of students that local arrangements are successful only in those towns where such schools do not exist. The fact may be recalled that up to 1868 the Bloomsbury School sufficed to supply the whole Kingdom, and if it had been progressive it might have still drawn the bulk of the students; but the methods of the forties were not appreciated in the seventies, so there started first Dr. Muter's school, then more one by one until we have eighteen schools of pharmacy in London and the provinces, each of which (taking an average) educates more students every year than the Bloomsbury School, and some of them have more pupils in a three-months' term than the Society's school has in a whole year.

We have not in the foregoing referred to the Preliminary Examination facilities which are provided for instruction in

Latin, English, and arithmetic for Preliminary students. In London such instruction may be obtained from Mr. A. H. Dawes, West Central School, 55 and 56 Chancery Lane, W.C., whose instruction is chiefly given by private or postal tuition. He has no fixed terms or courses; students can commence at any time; fees according to length of course taken. Similar instruction is obtainable at the LONDON CIVIL SERVICE AND UNIVERSITY COLLEGE, 27 Chancery Lane, W.C., and at the WESTMINSTER COLLEGE OF PHARMACY. Several provincial pharmacy schools also arrange for instruction, or have Preliminary classes, about which enquirers should consult the advertisements in this issue.

Apothecaries' Assistants. Many students who attend London schools of pharmacy go in for the assistant's certificate of the Society of Apothecaries. The certificate is without legal value, but the examination is a fair preliminary test before entering for the Minor. The examination is held on the fourth Wednesdays of January, March, May, July, September, and November, at the Apothecaries' Hall, Blackfriars, London, E.C., and consists of two parts:—(a) Practical: The compounding and dispensing of medicines at 10 A.M., and (b) Oral: The translation of prescriptions, chemistry, and the materia medica and pharmacy of the drugs named in a printed schedule, at 2 P.M. Candidates are required to give notice and pay the fee (2*l.* 2*s.*) seven days previously. These are the regulations for this year, and they are undergoing revision for 1898. Mr. Frank Haydon, L.R.C.P.L., at the above address, is secretary to the Court of Examiners. The regulations, which he supplies on application, contain all details about the examination.

IRELAND.

Two distinct grades of registered persons, connected with the drug-trade, are provided by the Pharmacy Acts (Ireland)—viz.:—

REGISTERED DRUGGISTS, who may sell poisons, but may not compound medical prescriptions whether containing poisons or not.

PHARMACEUTICAL CHEMISTS, who may sell poisons and compound medical prescriptions.

There also exist in Ireland "chemists and druggists" who have the privileges of registered druggists only, and who were in business as such at the passing of the Amendment Act of 1890. The following are the conditions upon which the

REGISTERED DRUGGIST LICENCE

is granted by the Pharmaceutical Society of Ireland:—The candidate must have served for four years as an apprentice or assistant to a pharmaceutical chemist, or to a licentiate apothecary, or to a person or persons who has or

have become, or who, had he or they survived or continued in business, would have been entitled to become, a registered chemist and druggist, or registered druggist. Declarations to this effect have to be made, and a fee of 2*l.* 2*s.* paid into the Bank of Ireland, to the credit of the Society's account. If the candidate pass the examination, another 2*l.* 2*s.* is paid for registration. The candidate is "examined with respect to his knowledge of English orthography and composition, arithmetic, and the weights and measures of the British Pharmacopœia, the appearance and properties of the various drugs and chemicals in general use, and the Act of the session of the thirty-third and thirty-fourth year of the reign of her present Majesty, chapter twenty-six" (the Irish Poisons Act). Examinations are held in Dublin, Belfast and Cork, when a sufficient number of candidates offer themselves for examination at the centres. Full information regarding this, and all other examinations of the Society may be obtained from

Mr. Arthur T. Ferrall, Registrar, Pharmaceutical Society of Ireland, 67 Lower Mount Street, Dublin.

THE PHARMACEUTICAL CHEMISTS' LICENCE

has much more onerous examinations than the druggists' one. As in Great Britain, a Preliminary examination has to be passed and a technical one, it being made a condition in respect to the latter that every candidate must go through a curriculum in chemistry, botany, and materia medica, pass the Preliminary examination at least one year before entering for the licence, and serve four years with a qualified person.* So that the conditions of entry are on the whole more stringent than in Great Britain.

Subjects of the Preliminary Examination.

LATIN.—To translate into English and parse sentences from a Latin author:—Caesar's "Commentaries," First Book, or Virgil's "Æneid," First Book.

ENGLISH.—English grammar, including orthography and parsing. To write on a subject selected by the Examiner; and to write from dictation.

ARITHMETIC.—The first four rules, simple proportion, vulgar fractions, and decimals. To describe the British weights and measure and the metric system.

ALGEBRA.—As far as simple equations, inclusive.

GEOMETRY.—Including the first book of Euclid.

The candidate must pass in one, at least, of the following optional subjects:—

ELEMENTARY PHYSICS AND MECHANICS.—Sound, light, and heat, as given in Ganot's "Elementary Course of Natural Philosophy"; mechanics of solids and fluids, comprising the elements of statics, dynamics, and hydrostatics.

THE RUDIMENTS OF BOTANY.—Oliver's "Lessons in Elementary Botany," Part I.

ELEMENTARY CHEMISTRY.—As included in Roscoe's "Lessons in Elementary Chemistry," chapters 1 to 13, inclusive. [*This subject will be compulsory after January 1, 1898.*]

FRENCH, GERMAN, or any modern language.

The examination is held at 67 Lower Mount Street, Dublin, on the first Mondays of January, April, July, and October. Fee, 2*l.* 2*s.*, which has to be paid to the Society's credit into the Bank of Ireland, and the receipt, with the application, sent to Mr. Ferrall at least fourteen days before the examination is held. The examination is conducted by written papers. The questions are regularly published in the *C. & D. Irish Supplement*.

Any examinations accepted by the General Medical Council for registration as a medical student and the Preliminary examination of the Pharmaceutical Society of Great Britain are accepted in lieu of the above. Fee, 2*l.* 2*s.*

Pharmaceutical Licence Examination.

The following are the conditions imposed upon all candidates for the licence:—

1. A year must intervene after passing the Preliminary examination, or its equivalent, before the candidate is admitted to the examination.

2. Candidates must be 21 years old and show that they have attended a course of practical chemistry, of not less than three months' duration (100 hours), and a course of botany and materia medica at one or more of the following recognised schools:—

The School of the Pharmaceutical Society of Ireland.

The School of the Pharmaceutical Society of Great Britain.

The Cecilia Street School of Medicine, Dublin. (Chemistry only.)

The City of Dublin Technical Schools. (Chemistry only.)

The City School of Chemistry and Pharmacy (Limited), Chancery Lane, London, W.C. (Chemistry only.)

The Royal College of Science, South Kensington. (Chemistry only.)

The Queen's College, Belfast. (Chemistry only.)

The Queen's College, Cork.

The Queen's College, Galway.

The Royal College of Science for Ireland, Dublin. (Chemistry only.)

The Royal College of Surgeons in Ireland, Dublin. (Chemistry only.)

The Working Men's Institute, Belfast.

Trinity College, Dublin. (Chemistry only.)

Anderson's College Medical School, Glasgow. (Chemistry only.)

Mr. S. Templeton's School, Belfast.

The School of Physic, Trinity College, Dublin. (Botany and materia medica only.)

* It is as well that it should be noted that the three years' dispensing required in Great Britain need not necessarily be under a qualified—i.e., registered—person.

3. Engagement for four years as apprentice or assistant with, and in the sole employment of, a pharmaceutical chemist (Ireland or Great Britain), registered chemist and druggist of Great Britain, or apothecary; or four years with a chemist and druggist or registered druggist of Ireland, and two years with either of the before-mentioned, provision being made for service with one or more or with firms. *Service with limited companies is not recognised.*

4. Pass examination in the following subjects:—

BOTANY.—To recognise the principal indigenous plants used in medicine, to refer them to their natural orders, and to give the definitions and the distinctive characters of their several parts.

MATERIA MEDICA.—To recognise specimens of the drugs of the Pharmacopœia, to describe their characters and native principles, name the sources from which they are obtained, and the official preparations into which they enter; and to detect adulterations.

GENERAL AND PHARMACEUTICAL CHEMISTRY.—The Elementary Laws of Chemistry and Physics, including Chemical Equations. To recognise the chemical substances of the Pharmacopœia; to describe the processes by which they are obtained; Qualitative Analysis (including the tests of the Pharmacopœia) and Volumetric Analysis; and to submit to a practical examination in these subjects.

PRACTICAL PHARMACY.—To translate Latin prescriptions; to detect dangerous doses; to compound and dispense correctly. To explain the processes of making the non-chemical preparations of the Pharmacopœia, and to recognise them; and to have an intimate knowledge of the Sale of Poisons (Ireland) Act, 33 & 34 Vict. chap. 28, 1870.

The examination is held at 67 Lower Mount Street, Dublin, quarterly, beginning on the second Wednesdays of January, April, July, and October, at 11 A.M. It is conducted first in writing (see *C. & D. IRISH SUPPLEMENT* for August), and is followed by practical work, the whole lasting three days. The fee is 5*l.* 5*s.*, payable fourteen clear days before the examination is held—i.e., Mr. Ferrall must have the bank's receipt, application, and all documents by that time.

EDUCATIONAL INSTITUTIONS.

The majority of the institutions recognised by the Society are referred to in the medical and scientific sections.

THE SOCIETY'S SCHOOLS OF CHEMISTRY, BOTANY, AND MATERIA MEDICA.

67 Lower Mount Street, Dublin.

The chemistry school is under the direction of Professor Titchborne, assisted by Mr. P. Kelly as demonstrator. The botany and materia medica school is under the direction of Professor Ninian Falkner, assisted by Dr. T. B. Johnson. The fees for the courses are:—Practical chemistry, 6*l.* 6*s.*; botany and materia medica (combined), 2*l.* 2*s.*

A chemistry course may commence at any time. Professor Falkner's courses begin on January 1, April 1, and October 1, each consisting of twenty-six lectures, given on Tuesdays and Thursdays at 8 P.M. For syllabus apply to the Registrar, 67 Lower Mount Street, Dublin, to whom the fees are to be paid.

BELFAST SCHOOL OF APPLIED CHEMISTRY,

Principal, Mr. S. Templeton.

Full courses of instruction for the Licence requirements begin in the last week of September and the first week of January. Practical chemistry daily (except on Saturdays) from 9.30 to 5, and four evenings of the week from 7 to 10.30. Fee (full course), 4*l.* 4*s.*; quarterly, 2*l.* 2*s.* Materia medica and botany, Monday and Thursday, 8 to 10 P.M. Fee (full course), 2*l.* 2*s.*; botany or materia medica, 1*l.* 1*s.*; compounded fee for the full course for the licence, 6*l.* 6*s.* Classes are also held for the Preliminary and Druggists' licence.

THE WORKING MEN'S INSTITUTE, Belfast.

Here courses of instruction similar to the foregoing are provided, Mr. Theo. Harper, L.P.S.I., being the pharmaceutical teacher.

When the Amendment Bill of 1890 was in Parliament the Irish Pharmaceutical Council took the opportunity of incorporating with it a clause authorising the institution of an assistants' examination similar to what the Apothecaries' Hall had for a long time conducted. This examination is now legalised (but carries no legal qualification with it), and is held in Belfast and Dublin on the second Mondays of

January, April, July, and October at 11 A.M.; fee, 1*l*. 1*s*. Candidates must have passed the Preliminary examination, served four years at the trade, and be 21 years of age. The examination is in prescriptions, practical dispensing, materia medica and the quality of specimens, and pharmacy. The examination at the Apothecaries' Hall, Mary Street, Dublin, may be taken by anyone who has two years' experience in pharmacy. The subjects of the examination are theoretical and practical pharmacy, materia medica, the British Pharmacopœia, and the translation and compounding of prescriptions. The fee for the examination is 2*s*. Full particulars may be obtained from the Secretary at the above address.

OTHER PARTS OF THE EMPIRE.

It may be serviceable to briefly indicate the conditions upon which pharmacy is practised in those parts of the British Empire where the Acts of Great Britain and Ireland do not apply:—

Isle of Man.—No legal restrictions on the practice of pharmacy exist.

Guernsey.—By an ordinance properly qualified persons only are allowed to keep open shop. The British Minor and Irish Pharmaceutical licence are accepted, and the French diploma of pharmacien.

Jersey.—Under a "regulation" similar to the Guernsey one (see *C. & D.*, August 14, 1897) pharmaceutical chemists and chemists and druggists of Great Britain or Ireland and French pharmaciens are eligible for registration to keep open shop for the sale of poisons.

Australasia.—All the colonies have pharmacy laws which institute conditions for practice as a chemist and druggist or pharmaceutical chemist, protecting the titles and reserving the right to sell poisons to those registered as such, and to medical

men. The conditions are substantially the same in all the colonies—viz., a Preliminary examination, three to four years' apprenticeship, and a technical examination. In Victoria classes in chemistry, &c., must also be taken out. The British Minor certificate is accepted in lieu of these requirements in all the Colonies. The Irish licence is accepted in New Zealand.

Canada (British North America).—Pharmacy laws are in force in British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, and Quebec, which are based, so far as titles and sale of poisons are concerned, on the British Pharmacy Act, but the conditions of qualification differ in some respects. The British and Irish certificates are, however, accepted in lieu of the examinations in all the provinces, on payment of a registration fee.

India.—There is no pharmacy or poisons law in India.

South Africa.—There are Pharmacy Acts in Cape Colony, Natal, and the South African Republic; but the British and Irish certificates exempt from the examinations instituted under the Acts.

West Indian Islands.—Acts or ordinances exist in the more important islands which require evidence of preliminary education, three years' apprenticeship, and competence in a technical examination. The Minor certificate or its equivalent exempts from these conditions. Similar regulations obtain in British Guiana and British Honduras.

The conditions upon which pharmacy is practised in most European States are akin to those in Great Britain. We do not register the German apotheker or the French pharmacien without examination, nor is the British chemist and druggist or Irish pharmaceutical chemist in a better position if he goes to France, Germany, or any other European country. In Egypt the British qualification is recognised, and it is also accepted in several States of America; but where it is not a Minor man should have difficulty in passing the Boards of Pharmacy examinations, which are milder than the Minor.

MEDICINE.

WHILE success in medicine depends in a measure upon personal qualifications which education enhances but little, even those who by superior "bed-side manner" attain to a high position in the profession acknowledge that early training and professional studies are most important elements in making success, and it is to these elements that this article must be confined.

We have in previous years discussed the prospects of the medical practitioner. So far as making a livelihood is concerned, it is unnecessary to go into this aspect of the matter again, for the profession stands where it did—it is somewhat overcrowded, there are just as many going into it year by year (and the proportion of superior men is increasing), but the difficulty of making a living is not seriously increased, while the prospects of attaining wealth and place amongst one's fellows have improved. Still, as the *Lancet* remarked in its Students' number, "Truly the prizes are great, but the blanks are much more numerous." We all start for the prizes.

The aim of the present article is to show the preliminary conditions for entrance into the medical students' rank, the best way that registered students of pharmacy may proceed thereto, or those who are not so registered; the registrable medical qualifications, how they may be obtained, and their relative professional value; where medical education may be obtained, and what it costs.

It may be well to point out before entering into these considerations in detail that the process of registration in the medical profession is quite different from what we find in pharmacy. With us the pharmaceutical societies are the examining and registering bodies. In medicine the General Medical Council is empowered by the Medical Acts (1) to regulate the standards of qualification to be observed by examining bodies; (2) to see that these bodies conduct the examinations properly; and (3) to register as general medical practitioners those who receive diplomas from the examining bodies. The General Medical Council is empowered to act in the same manner in respect to registration of licentiates in dentistry. The offices and Registrars of the Council are as follows:—

Mr. H. E. Allen, LL.B., 229 Oxford Street, London, W. (for England and Wales).

Mr. George Robertson, 46 George Square, Edinburgh (for Scotland).

Mr. S. W. Wilson, 35 Dawson Street, Dublin (for Ireland).

Any inquiries regarding registration as a medical student or as a general medical practitioner should be addressed to the registrar of the country in which the enquirer resides or is studying. The course which everyone must take in order to become a medical practitioner is broadly as follows:—

1. Pass a Preliminary examination in general education *before commencing* medical studies.
2. Register as a medical student when the Preliminary examination is passed, and the certificates of entrance to medical classes have been obtained.
3. Be engaged in medical studies for five years from the date of registration as a medical student, and pass the professional examinations as prescribed.

It is important to observe that the registrars have no authority to register any student until he has passed the Preliminary examination and commenced medical studies. The Council may antedate a registration which has been delayed; but it will be seen from the subjoined table of cases so antedated that nothing of the medical study done before the Preliminary examination has been passed is allowed:—

Initials of Name	Date of Preliminary Examination	Date of Commencement of Professional study.	Date of Registration	Date to which Student desired to be Antedated
A., D. M.	June, 1893	May 1, 1896	May 4, 1897	May 1, 1896
C., G. J.	April, 1895	Oct. 1, 1894	Oct. 30, 1895	April 1, 1895
C., H. B.	Nov., 1894	Oct. 8, 1896	Mar. 23, 1897	Oct. 8, 1896
D., A. M.	Dec., 1893	Oct. 1, 1893	Feb. 6, 1894	Dec. 1, 1893
G., A. S.	May, 1892	Mar. 1, 1894	May 1, 1897	Mar. 1, 1894
L., J.	July, 1896	June 1, 1891	Dec. 8, 1896	July 4, 1896
L., J. D. S.	Dec., 1896	Oct. 1, 1896	Jan. 28, 1897	Dec. 1, 1896
P., A. M.	Sept., 1891	Oct. 8, 1891	Apr. 27, 1897	Oct. 8, 1891
S., P. H.	Dec., 1891	Oct. 10, 1891	Nov. 10, 1893	Dec. 1, 1891

THE PRELIMINARY EXAMINATION.

As already stated, the General Medical Council merely fixes the standard of this and other examinations, and does not conduct any examination. In regard to the Preliminary it is required that it shall comprise the following subjects:—

A.—English language, including grammar and composition.

B.—Latin, including grammar, translation from specified authors, and translation of easy passages not taken from such authors.

C.—Mathematics, comprising—(a) arithmetic; (b) algebra, as far as simple equations, inclusive; (c) geometry, the subject-matter of Euclid, Books I., II., and III., with easy deductions.

D.—One of the following optional subjects: (a) Greek, (b) French, (c) German, (d) Italian, (e) any other modern language, (f) logic.

The Council will not in future accept any certificate of pass in a Preliminary examination in general education, unless the whole of the subjects included in the Preliminary examination required by the Council for Registration of Students of Medicine have been passed at the same time.

The Medical Council names certain examinations which meet its requirements, but before we mention these we wish to make it perfectly clear to students that some of the examining bodies do not recognise these examinations—e.g., the University of London insists upon everyone proceeding to its degrees, passing its Matriculation examination, and all other universities in the kingdom have their own entrance or Matriculation examinations which must be passed, although in some cases other similar examinations are accepted *pro tanto*. The examinations recognised by the Council include the Arts and other examinations, comprising the above-named subjects, of the universities of the United Kingdom, and the following:—

Royal Colleges of Physicians and Surgeons in Ireland.—Preliminary examination.

College of Preceptors.—Examination for a First-class Certificate or Second-class Certificate of First or Second Division. Preliminary examination for medical students.

Intermediate Education Board of Ireland.—Junior Grade examination, Middle Grade examination, Senior Grade examination.

Educational Institute of Scotland.—Preliminary Medical examination.

Scotch Education Department.—Leaving certificates in Lower and Higher Grades and in Honours.

Certificates of Indian, Colonial and Foreign Universities and Colleges are also accepted upon the general conditions above stated. In the case of natives of India, or other Oriental countries, whose vernacular is other than English, an examination in a Classic Oriental Language may be accepted instead of an examination in Latin. We recommend all who are interested to obtain a copy of the "Regulations of the General Medical Council in regard to the Registration of Medical and Dental Students," from Messrs. Spottiswoode & Co., 54 Gracechurch Street, London, price 6d., by post 6½d. This contains a complete list of the certificates accepted.

We are sometimes asked by those who have no registrable certificate what examination they should pass? To that a Scotch answer must first be given: What are you to take—a university degree or a registrable diploma? If a degree, pass the university matriculation or entrance examination; if a diploma one of the following examinations:—

College of Preceptors (Bloomsbury Square, London, W.C.).

A professional Preliminary examination is held in March and September yearly at Birmingham, Bristol, Leeds, Liverpool, and London, fee 25s., which must be paid fourteen days before the examination is held, but notice must be given thirty days before. There are first and second class examinations both entitling to registration. In the first class, candidates must pass in seven subjects, viz:—(1) one of the three English subjects (English, history, geography); (2) arithmetic; (3) a foreign language; (4) a second foreign language, or a second English subject, or one of the science subjects (chemistry, physics, natural history); (5) (6) (7) any three subjects not taken as three of the foregoing; and must obtain a total of not less than 700 marks. In the second class candidates must pass in six subjects, viz:—(1) English; (2) history or geography; (3) arithmetic; (4) a foreign language; or one of the science subjects (chemistry, physics, natural history), or algebra, or Euclid; (5) and (6) any two subjects not taken as two of the foregoing; and must obtain a total of not less than 400 marks. N.B.—The medical student must take the subjects

specified by the Medical Council. Full particulars regarding the examination may be obtained from Mr. C. R. Hodgson, B.A., Secretary to the College, at the above address, and the papers set at previous examinations may be had of F. Hodgson, 89 Farringdon Street, E.C., price, by post, 7d. each set. The ordinary examinations of the College in June and December are also open to medical students.

Educational Institute of Scotland (40 Princess Street, Edinburgh). A special medical students' Preliminary examination is held in the Oddfellows' Hall, Forrest Road, Edinburgh, and Free Church Training College, Cowcaddens Street, Glasgow. Fee 17s., payable to Dr. A. Mackay, 40 Princess Street, Edinburgh, before the examination is held. Although the prospectus which we have received states that the examination is held three times a year, it only gives one date—viz., from the 30th of the present month to October 2, at 11 a.m. A calendar containing examination papers can be obtained from Dr. Mackay, post free for 1s.

Royal University of Ireland.—The Matriculation examination is generally taken by Irish students, although the Royal Colleges examination is easier (and for that reason recommended by the Medical Council to be discontinued). The Matriculation examination is held towards the end of June and September in Dublin, Belfast, Cork, Galway, Carlow, Dundalk, Limerick, and Londonderry. Notice (a form can be obtained on application to the Secretaries, Royal University, Earlsfort Terrace, Dublin), with a fee of 17s., must be sent to the Secretaries not later than May 15 or August 23 preceding the examination. The following are the subjects:—(1) Latin; (2) French (or Greek or German, &c.); (3) English; (4) mathematics; (5) natural philosophy. For full particulars and examination-papers see the University Calendar.

The Preliminary examinations required by the Universities are referred to in the proper places.

THE CURRICULUM.

The five years' medical study is devoted to at least fifteen subjects, which are prescribed by the General Medical Council. The licensing bodies do not depart from the Council's requirements, but Universities generally elaborate some of the subjects, and may add others—e.g., the Scotch Universities require a knowledge of botany. The prescribed subjects are:—

(i.) Physics, including the elementary mechanics of solids and fluids, and the rudiments of heat, light, and electricity; (ii.) chemistry, including the principles of the science, and the details which bear on the study of medicine; (iii.) elementary biology; (iv.) anatomy; (v.) physiology; (vi.) materia medica and pharmacy; (vii.) pathology; (viii.) therapeutics; (ix.) medicine, including medical anatomy and clinical medicine; (x.) surgery, including surgical anatomy and clinical surgery; (xi.) midwifery, including diseases peculiar to women and to new-born children; (xii.) theory and practice of vaccination; (xiii.) forensic medicine; (xiv.) hygiene; (xv.) mental disease.

There is no exemption from these subjects except in the case of Arts and Science graduates who have spent a year in the study of chemistry, biology, and physics, and passed an examination in these subjects for their degrees. In such cases these subjects have not to be taken in a medical examination, and the graduates pass at once to the studies of the second year.

It is customary to study physics, biology, and chemistry during the first year of the curriculum, these constituting the subjects of the first professional examination; but anatomy is commenced towards the end of the year. After this—during the second and third years—anatomy, physiology, pathology, and materia medica and pharmacy are taken up, these being subjects of the second professional examination, which may, as a rule, be taken in two parts. By the third year the student begins to spend all the time he can in hospital wards (work commenced in the second year), and is thus introduced to such subjects as medicine and surgery. Therapeutics begins to be an interesting subject now, and by the fourth year the student finds that the work accumulates upon him, as he must crowd into this year lectures on all the subjects not so far undertaken in the examinations he has passed, as the fifth year is supposed to be solely devoted to hospital or private practice. Part of the final professional examination may be taken at the end of the fourth year. Amongst the subjects of that year which are taken in lectures are midwifery, hygiene or public health, diseases of the eye, ear and throat (if not taken in the latter half of the third year). The practical midwifery cases may be left to the last year, as the student has to superintend a number of confinements himself: this is a trying job

for the majority of men, but the knowing ones always go with some student more advanced than themselves and get a little experience before they undertake their own cases. Lectures on fevers, children's diseases, and mental diseases are generally left to the last year, and at the end of the period the student faces the examiners for the last time when their object is to give him living and *post mortem* cases upon which to demonstrate his fitness to take care of the sick, and here is found all the knowledge which he has acquired during the curriculum. Of all the subjects of the curriculum Anatomy stands out as by far the most important. Those who wish to succeed in practice invariably spend all the time they can spare at dissections, endeavouring to go beyond the prescribed courses both in regard to time and detail of dissection. As skill in diagnosis primarily depends upon anatomical and physiological knowledge the wisdom of this course may be understood.

REGISTRABLE MEDICAL QUALIFICATIONS.

The selection of the qualification which the student may proceed to is influenced partly, perhaps chiefly, by his location. The principal centres of medical education in England and Wales are *Aberystwith*, Birmingham, Bristol, Cambridge, Cardiff, Leeds, Liverpool, London, Manchester, Newcastle-on-Tyne, Nottingham, Oxford, and Sheffield. At the towns printed in *italics* a part of the curriculum only is obtainable. Belfast, Cork, Dublin, and Galway in Ireland, and Aberdeen, Dundee, Edinburgh, Glasgow, and *St. Andrews* in Scotland are other places where medical education is provided. At all the university towns students may study either for degrees or diplomas, but in London, where there is no teaching university, the majority of students prepare for a diploma. In Edinburgh, on the other hand, nine out of ten students prepare for the university degrees, just as those who attend the Victoria University Colleges prepare for the degree of that University. How should the student proceed?

If he is a moneyed man he scarcely requires any other advice than: Go to a university town—Cambridge, Edinburgh, Dublin, or Manchester—and stay there until you get a degree. If one resides in, or within easy travelling-distance of, a town where are medical schools, then he should take full advantage of the facilities afforded, noting before he commences his studies that several universities (Cambridge, Royal Irish, Scotch, Durham, and Victoria) require only a part of the curriculum to be taken within their walls, so that one may start for a degree by ensuring that he has passed a Preliminary examination approved by the University that he aims at. Education in all the medical schools of the country is recognised by the diploma-granting bodies, who also exempt medical graduates from a large part of the examinations. These examinations are, as a rule, not so severe as the University examinations.

So far, we have written about the student as a "he." Many women now study medicine, and every qualifying body and university now receives them on the same footing as men, except the Universities of Cambridge, Dublin, and Oxford, and the Royal Colleges of Physicians and Surgeons of London.

Before proceeding to give particulars of the respective degrees and diplomas it may be well to reprint three paragraphs which we have given before regarding conditions upon which the Universities of the United Kingdom confer degrees in medicine and surgery, viz.:—

A. Residence not required, but evidence that applicants have completed the medical curriculum in an approved school or schools. This is the case only at the University of London.

B. Applicants shall spend the whole or part of the time at the classes of the University; this obtains with the Scotch Universities, Durham and Victoria Universities, the Royal Irish University, and Cambridge University (with residence).

C. Students shall not only attend the classes of the degree granting body, but reside in a College of the University, and graduate in arts at the Universities of Dublin and Oxford.

CLASS A.

THE UNIVERSITY OF LONDON,
Burlington Gardens, London, W.

The Matriculation Examination of this University is recognised by all medical qualifying bodies, except the Universities of Cambridge, Dublin, and Oxford, and is

regarded in England and Wales as one of the most stringent tests of elementary education, and as an "open sesame" to most professions. It is also one of the most ticklish examinations to get through, as the whole of the subjects have to be passed at one time. In 1893 the examination will be held on the second Monday of May in Birmingham, Bristol, Cardiff, Glasgow, Leeds, London, Newcastle-on-Tyne, Plymouth, and Portsmouth; and on the second Monday of June at Aberystwith, Bangor, Birmingham, Bristol, Cardiff, Edinburgh, Leeds, Liverpool, London, Manchester, Newcastle-on-Tyne, Nottingham, Plymouth, and Sheffield. The conditions of entry and the subjects of the examination are as under-noted:—

Candidates must have completed their 16th year.

They must apply *by postcard* for a form of entry at least five weeks before the date of execution, and pay the fee (2*l.*) four weeks before.

They may enter for a pass or honours in the following subjects:—1. Latin. 2. One of the following languages: Greek, French, German, Sanskrit, Arabic. 3. The English language; and English History, with Geography relating thereto. 4. Mathematics. 5. Mechanics. 6. One of the following branches of Science: Chemistry, Heat and Light, Magnetism and Electricity, Botany.

We advise intending candidates to get from the Registrar at the above address a copy of the "Regulations for Matriculation," wherein they will find particulars of each of the subjects. The examination papers are reprinted in the University Calendar, which may be obtained of Messrs. Eyre & Spottiswoode, East Harding Street, London, E.C., or through any bookseller. "Honours" means that the candidate must take 1,800 out of a possible 2,500 marks. Scholarships of 30*l.*, 20*l.*, and 15*l.* for two years are awarded to the first three, and prizes of 10*l.*, 5*l.*, and 5*l.* to the second three in the honours list.

Three Professional Examinations must be passed subsequent to the Matriculation, viz.:—

Preliminary Scientific (M. B.) Examination in (1) chemistry and physics and (2) general biology. Fee, 5*l.* The examination is held in London and provincial centres in January and July. The examination may be taken in two parts, or at one sitting, any time after the Matriculation. After passing it the student must be engaged for four years at the prescribed professional studies.

Intermediate Examination in anatomy, physiology and histology, organic chemistry, materia medica, and pharmaceutical chemistry. May be taken two years after the Preliminary Scientific examination, and is held in London and the provinces. Fee, 5*l.* The candidate must be 19 years of age.

M.B. Examination is held in London only, and a period of twenty-one months must intervene between the Intermediate and this examination. The candidate must be 21. The subjects of the examination are general pathology, general therapeutics, hygiene, surgery, medicine, obstetric medicine, and forensic medicine. Fee, 5*l.*

Evidence of having attended lectures and acquired practical instruction must be produced before the candidate is admitted to the Intermediate and M.B. examinations, and five years must elapse between the Matriculation and M.B. examinations. The M.B. diploma is a complete qualification for registration as a medical practitioner. The University confers the degree of Bachelor of Surgery only upon M.B.'s. M.D. and M.S. are also obtainable after two years' practice, and is conferred upon examination or the presentation of a printed thesis which meets with the approval of the Examiners.

CLASS B, UNIVERSITIES.

We include Cambridge in this class, because of five years of medical study nine terms only of residence in a college of the University are obligatory, this meaning about a half of the curriculum. The medical school at Cambridge has recently been completed, and the whole curriculum may be obtained there: but it is customary to spend at least a portion of the time in a London medical school for the privilege of the more extensive hospital practice. The medical degrees of Cambridge indicate good social position, rather than high professional training. The preliminary step, in the case of students who do not take B.A. Cantab (which most Cambridge medical students do) is to pass the Previous examination or the Cambridge Senior Local. Next the student must enter a

college, or obtain permission to live out under the residential regulations which obtain at the University. Most medical students of Cambridge spend the first three years of the curriculum there (12 terms), and the last two in London or elsewhere. There are three Professional examinations, each divided into two parts, which may be taken together or separately. The examination-fees are 2*l.* 2*s.* for each part.

Scotch The Universities of Aberdeen, Edinburgh, and Glasgow have the oldest medical schools in the kingdom, that of Edinburgh having continued uninterruptedly for more than three centuries, and while medical education at the southern side of the border had practically ceased to exist. One result of this long-continued work is that the Scotch medical chairs are comparatively rich (one in Edinburgh is said to be worth 5,000*l.* a year), and consequently attract the best talent amongst teachers; so also exceptionally large numbers of students. Edinburgh is the largest British medical school, and Glasgow comes next to it, and is rapidly making up to it both in reputation and number of students. St. Andrews University is endeavouring to resuscitate the medical school there; but it has yet to make its reputation in medicine, and has to live down its granting of the M.D. degree to medical practitioners of standing on a comparatively trivial examination. The conditions of entrance into all the four universities are now alike. Jointly they appoint a board of examiners to conduct the Preliminary examination for medical students. This examination must be passed before professional studies commence. The subjects of the examination are (1) English (an essay, a paraphrase, two questions on history, two on geography, four questions on grammar, and two of a literary or general kind), (2) Latin (translation and parsing, prose composition, grammar and sentences), (3) elementary mathematics (geometry, algebra, and arithmetic), and (4) Greek, or French, or German. This examination is held in March and September at the universities; fee, 10*s.* 6*d.* Further particulars regarding it may be obtained from the Dean of the Medical Faculty of any of them. The only exemptions to the examination are: Preliminary examination in arts or science of a Scotch university; the leaving certificates of the Scotch Education Department; the entrance of matriculation examinations of English and Scotch universities (except Durham), the Oxford and Cambridge locals (higher) *pro tanto*, and certain Canadian, colonial, Indian, and foreign certificates which cover the subjects of the medical Preliminary.

The degrees granted by the Universities are M.B. and Ch.B. (bachelor of medicine and surgery), which are taken together, and later M.D., and Ch.M. if desired. For the first degrees the requirements are four years' study of sixteen subjects at a medical school, and nine months of the fifth year to be devoted to clinical study at one or more public hospitals or dispensaries. Two of the five years of the curriculum must be spent in the University whose degree is desired, and the other three years in any approved medical school at home or abroad. The "regulations" of the Universities contain full details regarding the nature of the curriculum, which students should acquaint themselves with. The advantage of the Scotch University system is that the teaching and examinations are regulated together, and the teachers are on the boards of examiners (along with independent men). There are four examinations for the degrees M.B., Ch.B., viz.:—*First*, botany, zoology, physics, and chemistry (at the end of the first year). *Second*, anatomy, physiology, and materia medica and therapeutics (at the end of the third year). *Third*, pathology and medical jurisprudence and public health (at the end of the 4th year). *Fourth*, surgery and clinical surgery, practice of medicine and clinical medicine, and midwifery (at the end of the curriculum).

The University of Durham grants the degree of M.B., which is a complete qualification, therefore registrable, and other degrees in medicine and surgery.

Durham. The conditions of entrance are peculiar, for, in addition to producing the certificate of registration as a medical student, one must pass the University's Preliminary examination in Arts in four out of nine subjects. The exemptions from this are the Final examinations in Arts of most British Universities, and the first public examination for B.Litt. (Durham). As to the curriculum of five years, at least one year must be spent in attendance at the College of

Medicine, Newcastle-on-Tyne, so that the degree is one which London students may prepare for with the minimum of residence outside London. There are four professional examinations, viz.:—

First.—Elementary anatomy; elementary biology; chemistry; physics.

Second.—Anatomy; physiology; materia medica, therapeutics, pharmacology, and pharmacy.

Third.—Pathology; medical jurisprudence; public health, including elementary bacteriology.

Fourth, or Final.—Medicine, clinical medicine and psychological medicine; surgery and clinical surgery; midwifery and diseases of women and children.

As in the London and Scotch Universities candidates may enter for chemistry and physics as soon as they register as medical students, provided they produce the necessary class certificates. Exemptions are also provided for those who have passed the Royal Colleges examination; indeed, there is a degree of reciprocity between the two examining boards, which is of importance to London medical students. For particulars see the College of Medicine calendar. Secretary, Professor Howden, at the College, Newcastle.

The Victoria University is an affiliation of the Owens College, Manchester, and the University Colleges of Leeds, **Victoria.** and Liverpool, for the purpose of granting degrees, amongst them M.B. and M.D. There are medical schools at each of the Colleges, and the classes therein are recognised by the University. At least two of the five years of the curriculum must be spent in one of the Colleges. All students must pass the entrance examination in arts, the subjects of which are English, Latin, mathematics, elementary mechanics, and one of the following, Greek or French or German, or any modern language. Certain examinations are accepted in lieu of it, *e.g.*, the College of Preceptors first class if it contains the subjects named, and the London Matriculation. There are three professional examinations, but the third is divisible into two. They closely resemble the London University medical examinations, and the fees are the same. Communications should be addressed to the Registrar, V.U., The Owens College, Manchester.

The degree of the Royal University of Ireland is M.B., B.Ch., B.A.O. Candidates must first pass the Matriculation **R.U., Ireland.** examination which is held in Dublin and certain provincial towns twice a year, the subjects being (1) Latin; (2) another language; (3) English; (4) mathematics, and (5) natural philosophy. The First University examination must also be passed. This is a more advanced examination in the same subjects. After these come the medical curriculum and four professional examinations. The curriculum may be passed at any medical school in the United Kingdom. The examination fees (including qualifying certificates) amount to 17*l.* Further information may be obtained from the Secretaries at the University, Dublin. With the University the Queen's Colleges of Belfast, Cork, and Galway are affiliated.

CLASS C, UNIVERSITIES.

The Oxford University degree of B.M. requires residence of at least three years in the University while the candidate takes the classes and examinations for B.A.

Oxford. which is a necessary preliminary to the medical studies. Subsequently the student may pursue his studies elsewhere. There are two professional examinations, the first in organic chemistry, human anatomy, human physiology, materia medica, and pharmacy; but previous to passing this examination the candidate must have passed in the School of Natural Science the Preliminary examination in mechanics and physics, chemistry, animal morphology, and botany, which can be done during the B.A. course. The second professional examination is in medicine, surgery, midwifery, pathology, and forensic medicine, with hygiene.

The conditions upon which the M.B., B.Ch., B.A.O. of the University of Dublin is obtainable are somewhat similar to the Oxonian—*i.e.*, the student must be a B.A.—**Dublin.** but the studies for that degree and the medical one may be concurrent, and the student must be for at least five academic years on the books of the Medical School, reckoned from the date of his matriculation. There are two medical examinations—the Previous Medical or half M.B., and the Final, comprising fifteen subjects, seven of which may

be taken in the fourth year and the rest at the end of the fifth.

MEDICAL DIPLOMAS.

Five diplomas granted by non-university bodies are recognised by the General Medical Council for registration as a general medical practitioner. These are (1) the English "double qual.," (2) the Scotch "triple," (3) the Irish "double qual.," (4) the licence of the Society of Apothecaries, London, and (5) the licence of the Apothecaries' Hall, Dublin. The preliminary conditions in respect to these are those of the General Medical Council—*i.e.*, candidates must be registered medical students, and must go through the prescribed curriculum of study in a recognised school or schools. We deal first and fully with the English "double qual.," which is typical of all the rest, so that we do not enter into detail regarding them. The disadvantage of a diploma is sentimental largely, and consists in the fact that the holders are not, by etiquette, entitled to call themselves "Dr."

M.R.C.S. ENG. AND L.R.C.P.L.

This qualification is conferred by a Board of Examiners jointly appointed by the Royal Colleges in London. The Examination Hall is on the Victoria Embankment, W.C., and the Secretary is Mr. F. G. Halkett. There are three professional examinations, *viz.*:—

First, in chemistry and physics, practical pharmacy, and elementary biology. May be taken in three parts at different times, and the subjects may be taken as soon as one has registered as a medical student, but chemistry and physics and biology may be taken before. Evidence of instruction in the subjects must be produced. This also applies to all that follows.

Second in anatomy and physiology at the end of two winter sessions and one summer session from the date of registration as Medical Student, and six months after passing chemistry and physics, and biology.

Third or Final may be taken in the following three parts:—Part I. Medicine, including medical anatomy, pathology, practical pharmacy (if not taken before), therapeutics, forensic medicine, and public health. Part II. Surgery, including pathology, surgical anatomy, and the use of surgical appliances. Part III. Midwifery and diseases peculiar to women (this part may be taken at any time after the completion of the fourth year, and not less than one year after the second examination; the rest at the end of the fifth year).

The examination fees amount to 35 guineas. This diploma is one which the majority of London medical students and many in the provinces go in for. The examinations are held in January, April, July, and October. A book of questions set at the examinations is published by Messrs. Taylor & Francis, Red Lion Court, Fleet Street, London, E.C. Graduates of British universities are exempted from the first and second examinations, and those holding colonial, Indian, and foreign qualifications are exempted from the first, and may take the second and third at one time. The diploma has a peculiar value in the metropolis, and is generally taken by those who aim for hospital appointments. It is the first step for F.R.C.S., but the F.R.C.P. is an honorary title conferred upon consultants who have taken the M.R.C.P., for which there is an examination distinct from the above.

L.R.C.P. & S. EDIN. AND L.F.P.S.G.

This is the "triple qual." conferred by the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow jointly. The examinations are substantially the same as the above, but pharmacy comes into the second examination, and the subjects of the first cannot be taken until the end of the first year. The examinations are held in Edinburgh and Glasgow. The fees amount to 25 guineas. Medical graduates and other qualified persons are exempted from certain portions of the examinations. For full particulars apply to Mr. James Rebertson, 48 George Square, Edinburgh, or Mr. Alexander Duncan, B.A., 242 St. Vincent Street, Glasgow.

L.K.Q.C.P.I. AND L.R.C.S.I.

The Royal Colleges of Ireland (Secretary, Mr. Greenwood Pim, M.A., 6 Kildare Street, Dublin) conduct a Preliminary examination, although the General Medical Council has advised them to discontinue it. The Colleges do not compel candidates for their diplomas to pass

this examination, evidence of registration as a medical student satisfying them. The examination is in seven prescribed subjects, and will be held on March 15 and 16 and September 27 and 28, 1898, in Dublin; fee, 2*l.* 2*s.* There are four professional examinations taken at the end of the first, second, fourth, and fifth winter sessions. The total fees (including matriculation) amount to 45 guineas.

L.S.A.

The examinations of the Society of Apothecaries, London, and the regulations in respect to them, are similar to those for the English "double qual." There are two examinations—the "Primary" and "Final"—but as the latter is divided into two sections, there are substantially three examinations as at the Victoria Embankment. The total fees are 15*l.* 15*s.*, this being the cheapest diploma in the kingdom.

L.A.H.

The Apothecaries Hall of Ireland has now had its board of examiners completed by the Medical Council, and from October next will resume its examinations for the diploma. There are to be four professional examinations, similar to those of the Royal Irish Colleges.

FOREIGN DOCTORATE DEGREES.

It is now becoming the custom in London medical schools to take either the "double qual." or the apothecaries' diploma, and at the same time to prepare for the London, Durham, or Cambridge M.B., so as to be free to use the title "Dr." The majority, however, never get that length, and have to look elsewhere for a degree. The M.D. of the Brussels University is the most popular, because it is the most easily obtained. It is not a registrable degree—that is, the Medical Registrar has not the power to add it to the qualifications of the holder in the medical register—but many get it and use it without, apparently, violating medical etiquette. Any duly registered medical practitioner is admitted to the examination for the degree, which is held in Brussels five times a year. It is a *viva voce* examination, in three parts, *viz.*:—

First Part.—(1) General medicine; (2) general therapeutics; (3) materia medica and pharmacology; (4) pathology and morbid anatomy, with use of the microscope; (5) special therapeutics and medicine of internal diseases, including mental diseases.

Second Part.—(1) Surgery; (2) theory of midwifery; (3) public and private hygiene; (4) medical jurisprudence.

Third Part.—Clinical examinations on patients in: (1) Internal medicine; (2) surgery; (3) ophthalmology; (4) examination in midwifery, consisting in obstetrical operations on the *mannequin* (model of pelvis); (5) examination in operative surgery, consisting of some of the usual operations on the dead subject—*viz.*, amputations, ligature of artery, &c.; (6) examination in regional anatomy, with dissections.

The fees and charges amount to 22*l.* If a written examination is desired, 1*l.* more. The examination is conducted in English through an interpreter, and lasts about ten days. Information may be obtained from Dr. Albert Mills, 30 Rue du Pépin, Brussels.

MEDICAL EDUCATION.

Elsewhere we give some particulars of the cost of medical education and qualification as a whole. In this section we print the briefest possible particulars of the various medical schools in the United Kingdom, with the cost of the complete curriculum in each of them. The fees mentioned in the London section are for the classes for the "double qual.," and in all cases it should be clearly understood that the sums include class and matriculation fees only, and the minimum course of study. The sums are augmented in all cases by the cost of anatomical subjects, histological and other instruments, books, stationery, and in some cases by supplementary or tutorial classes. It would be safe to reckon on 20*l.* to 30*l.* to cover these items of expenditure.

We cannot in our limited space refer in detail to the many scholarships which are offered by nearly all medical schools; some of them are mentioned in our advertisement section, and a complete list of them is given in the *Lancet* of August 21. We refer to the matter here simply to indicate that these scholarships afford smart men a means of meeting the cost of the education; indeed, many practitioners have

carried themselves through the curriculum solely by means of scholarships.

LONDON SCHOOLS.

Charing Cross Hospital, 62 Chandos Street, W.C.—Fees, 115*l.* 10*s.*, or 127*l.* 1*s.* in instalments. Dean, Dr. Montague Murray.

Guy's Hospital, Borough, S.E.—Fees, 157*l.* 10*s.*, or 168*l.* in instalments. Has a residential college, in which rooms cost from 19*s.* to 27*s.* per week, and board 1*l.* per week. Dean, Dr. L. E. Shaw.

King's College, Strand, W.C.—Fees for London M.B. curriculum, 148*l.*, or 164*l.* in four instalments. Has a residence; terms, 50*l.* to 60*l.* (rooms and dinner) per academical year. (All students must attend a course of Divinity lectures in the first year.) Dean, Sir Hugh Beevor, M.D.

London Hospital, Mile End, E.—Fees, 126*l.*, or 136*l.* 10*s.* in instalments. (Sons of medical men 15 guineas less.) Warden Mr. Munro Scott, Turner Street, Mile End, E.

London School of Medicine for Women, 30 Handel Street, Brunswick Square, W.C.—Fees for L.S.A. curriculum, 125*l.*, or 135*l.* in four instalments. Dean, Mrs. Garrett Anderson, M.D.

Middlesex Hospital, Cleveland Street, W.—Fees, 126*l.*, or 136*l.* 10*s.* in instalments. Secretary, Dr. W. Pasteur. Residential college, 14*s.* 6*d.* to 17*s.* 6*d.* per week (exclusive of board). Warden, the Rev. W. G. Deighton.

St. Bartholomew's Hospital, West Smithfield, E.C.—Fees, 157*l.* 10*s.*, or 168*l.* in instalments. Has a residence for students. Warden, Dr. T. W. Shore.

St. George's Hospital, Hyde Park Corner, S.W.—Fees, 150*l.*, or 160*l.* in instalments. Dean, Dr. Isambard Owen.

St. Mary's Hospital, Cambridge Place, Paddington, W.—Fees, 139*l.*, or 144*l.* in instalments. Dean, Mr. Geo. P. Field. Residential college, 33 and 35 Westbourne Terrace, Hyde Park, W.; board and lodging, 75*l.* per academic year. Warden, Mr. H. Stansfield Collier.

St. Thomas's Hospital, Albert Embankment, S.E.—Fees, 150*l.*, or 157*l.* 10*s.* in instalments. Medical Secretary, Mr. G. Rendle.

University College, Gower Street, W.C.—Fees for London M.B. curriculum, 174*l.* 6*s.*; for "double qual.," 141*l.* 15*s.*, or 147*l.* in instalments. Dean, Professor R. J. Goodlee, F.R.C.S.

Westminster Hospital, Caxton Street, S.W.—Fees, 105*l.*, or 126*l.* in instalments. Dean, Dr. Hebb.

ENGLISH PROVINCIAL SCHOOLS.

Aberystwith and Bangor University Colleges, so far as the First Professional examination is concerned.

Birmingham.—*Mason College* (Queen's Faculty of Medicine).—Fees (complete for double qualification, including dissections), 133*l.* 7*s.* 6*d.* Dean, Dr. Bertram C. A. Windle.

Bristol.—*University College*.—Fees, 105*l.* (in one sum). Dean, Professor E. Markham Skerrett, M.D.

Cambridge.—*University Medical School*. See the Calendar.

Cardiff.—*University College*.—Instruction goes up to and including intermediate M.B. London. Fees (including hospital), 62*l.* 15*s.*, or for two years for L.S.A., 40*l.* 5*s.* Dean, Dr. J. Berry Hayeraft.

Leeds.—*Yorkshire College*.—Fees for M.B. Vic. instruction, 141*l.* 10*s.*; for "double qual.," 121*l.* 16*s.* Dean, Mr. Scattergood, M.R.C.S., 41 Park Square.

Liverpool.—*University College*.—Fees, 135*l.* for M.B. Vic. curriculum. Dean, Professor Paterson.

Manchester.—*Owens College*.—Fees for M.B. Vic., 112*l.*, exclusive of extra classes included in the Liverpool. Dean, Professor A. H. Young, F.R.C.S.

Newcastle-on-Tyne.—*Durham College of Medicine*.—Fees, 99*l.* 15*s.*, with some extras. Secretary, Professor Howden.

Sheffield.—*School of Medicine*.—Fees, about 110*l.* Hon. Secretary, Dr. W. T. Cocking, Leopold Street.

IRISH SCHOOLS.

Belfast.—*Queen's College*.—Fees similar to Cork. Registrar, Dr. John Purser.

Cork.—*Queen's College*.—Fees (for M.B.R.U.I.), 85*l.* 4*s.* Registrar, Mr. Alexander Jack, M.A.

Dublin.—*Catholic University Medical School*, Cecilia Street. —Fees for "double qual." or M.B. curriculum, 112*l.* 5*s.* Registrar, Dr. A. Birmingham.

School of Physic in Ireland (Trinity College).—Fees, 125*l.* 9*s.* Registrar, Mr. H. W. Macintosh, M.A., Trinity College.

Carmichael and Ledwich Schools of Surgery.—Fees for "double qual.," 107*l.* 2*s.* Registrar, Mr. G. P. Blake.

Royal College of Surgeons.—Free lectures on comparative anatomy are delivered to matriculated students of the college.

Galway.—*Queen's College*.—Fees as at Cork. Registrar, Professor Townshend.

Part of the curriculum may also be obtained at the Royal College of Science, Dublin, and University College, Stephen's Green, Dublin.

SCOTCH SCHOOLS.

Aberdeen.—*University Faculty of Medicine*.—Fees about 90*l.* Secretary, Mr. Donaldson R. Thom, M.A.

Dundee.—*University College*.—Classes and hospital practice for the first two years. Secretary, Mr. R. N. Kerr.

Edinburgh.—*University Faculty of Medicine*.—Minimum class and hospital fees, 115*l.* Secretary, Mr. John Kirkpatrick.

School of Medicine of the Royal Colleges.—Fees for triple qualification curriculum, 75*l.* Secretary, Mr. J. R. Whitaker, Surgeons' Hall, Nicolson Street.

School of Medicine for Women, Surgeon Square.—Secretary, Miss Black.

Glasgow.—*University Faculty of Medicine*.—Fees about 120*l.* Assistant-clerk, Mr. W. Innes Addison, Matriculation Office.

Anderson's College Medical School, Dumbarton Road, Partick. —Fees for Scotch triple, about 70*l.* Secretary, Professor A. M. Buchanan.

Queen Margaret College, 98 St. George's Road (women's department of the Glasgow University). Fees for M.B., about 120*l.* Secretary, Miss Galloway.

St. Mungo's College, 86 Castle Street.—Fees for triple qualification, about 75*l.* Secretary, Professor M. Laurie.

St. Andrews.—*University Faculty of Medicine*.—The subjects for the first two years of the curriculum are professed. Fees, 3*l.* 3*s.* per subject. Secretary, Mr. J. M. Anderson.

The Winter Session of the Medical Schools begins in October. In London about one-half of the schools will open on Friday, October 1, and the rest, except one, on October 4. The following are amongst the arrangements:—St. George's Hospital, October 1, address by Dr. Patrick Manson, Lecturer on Tropical Medicine; University College, October 4, introductory address by Mr. Raymond Johnson, F.R.C.S.; Charing Cross Hospital, October 4, introductory address by Dr. William Carter, Professor of Materia Medica in University College, Liverpool; Middlesex Hospital, October 4. Lord Strathcona and Mount Royal, Chancellor of McGill University, Montreal, will address the students; London School of Medicine for Women, October 1, address by Mr. G. MacKinlay, F.R.C.S.

As a fitting conclusion to this section we present some notes by a medical student who has completed the greater part of his curriculum, and is still acting as a chemist's assistant (204/21):—

A Student's Experience.

When, on my twenty-first birthday, I completed my apprenticeship to pharmacy, and stepped out into the world a free man, I had very little to boast of in the way of personal property beyond a strong and healthy ambition to enter the medical profession. Being without capital and expectations, I was rather at a loss as to how I might attain the end I had in view. I had passed the Medical Preliminary examination during my apprenticeship, and had registered as a medical student—on the ground of being engaged in the study of practical pharmacy under a registered chemist. As there were five months to pass before the commencement of the winter session I sought a situation, and six days after saying "Good-bye" to the place of my apprenticeship I found myself installed as assistant in a small, good-class business in one of our largest provincial towns, which has a fine college and a small, but excellent, medical school. At the end of the summer my employer agreed to my making arrangements for commencing the first year's course of the medical curriculum. This arrangement was more easily made because our busiest time during the day was between 5 p.m. and closing-time at 9 p.m. In general terms, our agreement was as follows:—

I was to be allowed the time for attendance in the necessary classes (which practically amounted to four mornings from 9 to 1 o'clock, and two afternoons from 2 to 5 o'clock). In return for this I gave up my daily hour for recreation and the weekly half-holiday from 2 p.m. on Wednesdays, and at

the same time agreed to receive a proportionately reduced salary. Hours of duty remained as before—viz., three evenings a week after closing-time, and every alternate Sunday (whole day).

I was an indoor assistant, but as I had the use of a small sitting-room to myself I was favourably situated for my work. I commenced study the first week in October. As I was aiming for a degree, I had to take out lecture and laboratory courses in the following subjects:—

Chemistry.—3 hours per week.	} For courses of nine months (three terms or one academic year).
Physics.—4 hours per week.	
Zoology.—7 hours per week.	} For courses of six months (two terms).
Botany.—7 hours per week.	

The classes in zoology commenced in October, and finished at the end of March following; those in botany did not begin till January, but extended until the end of July.

I found the college authorities very good in regard to the payment of the fees. I had to pay 28*l.* 8*s.* for my first year's classes, but I was allowed to pay this amount in instalments at the beginning of each term. On the whole, although apparently handicapped for time, I did not find much difficulty in my first year's work, and I was always well to the front in the terminal examinations.

The lecture-course in chemistry covered considerably more ground than that laid down in the syllabus for the "Minor." The practical work consisted very largely of qualitative analysis of mixtures of different salts, the preparation of specimens, and in the special reactions of organic substances, such as starch, sugar, &c., as well as tests for the principal poisons.

The lectures in physics were intensely interesting. At the end of lectures, exercises and problems were generally set for home solution. The laboratory-work was most useful in giving a clear knowledge of the commoner physical apparatus and methods. Botany lectures were very full, and quite advanced enough for the Major, except as regards morphology, the details of which were not dwelt upon at any length. The laboratory-work in zoology consisted in the dissection by each student of a series of animals, and in the microscopical examination of their different tissues. In botany the laboratory-work was almost entirely microscopical, each student having to cut and mount about eighty sections.

Besides class-work I used to get from fifteen to twenty hours' reading a week. I generally got to work about 9.30 p.m., after closing time, and from that time I would read up to 1 a.m., or at examination time to 2 a.m. My reading was sometimes very much interrupted on the nights when I was on duty. On Saturdays we kept open till 11 p.m., and I was too tired to do any reading then. I used to make pretty good use of the Sundays when I was on duty. On those days I generally managed to get in from six to eight hours' reading. I always read on Sunday nights to make up for Saturdays.

At the end of the year I took first place in the college examinations (among the medicals) in physics and chemistry, securing the silver medal in the latter subject. In botany and zoology I also ranked well. At the end of July I had to sit for my First Professional examination. For this purpose I had to make a trip to Scotland (it is the Scotch M.B. I am going for), but a convenient excursion lightened the heavy travelling expenses. The examination lasted about a week, and consisted of a two hours' written paper, followed by practical and oral examinations in each subject. I was successful.

Next winter I took anatomy and physiology under the old arrangements as to time, twelve hours being devoted to lectures, and twelve hours to dissecting. This last is most fascinating work when one has got over the initial feeling of repugnance. I again paid my fees in instalments. In this way I worked to the end of March. In May, after a month's vacation, the summer session commenced. My programme then consisted of lectures on materia medica and histology, with practical classes in each subject. I escaped the class on practical pharmacy and materia medica, saving the 2*l.* 2*s.* fee by means of my indentures.

At the end of each term we had a college examination for each class. In anatomy and physiology I found myself rather handicapped, partly because of my limited leisure, but especially because I could not just then afford to purchase the rather expensive books required. A prize which I gained for an essay at the end of the winter session relieved me, however, from that difficulty. In materia medica I more than held my own, and at the end of the summer session I was awarded the silver medal given on the result of the class examination.

So far the "part-time" arrangement had worked fairly well, although its doing so was largely due to the kindly thought of my employer. In return for his consideration I felt bound to throw myself into his plans as heartily as possible during business hours. As a result, on the approach of another winter session, it was tacitly understood that I should remain on the same conditions.

The commencement of the session found me at my place in the dissecting-room. Besides practical anatomy I took out a tutorial

class and a practical course in physiology (chemical and experimental). This year I had to commence hospital work. For the privilege of attending clinical lectures and walking the hospital-wards for one year I had to pay 10*l.* 10*s.* I had about twenty-six hours for day-work during the week. By this time my employer had obtained the services of an apprentice, and this lightened the duties in the shop somewhat during my absence at college. At the end of the winter session I was successful in obtaining second prize for dissecting. Although I had been able to keep my place among the good workers, I found that I did not know my work sufficiently well to make my success at the Second Professional examination a certainty. At Easter I talked matters over with my employer, and as a result it was arranged that I should have more leisure. I remained as part-time assistant, but the time I put in at shop-work was much reduced, and I gave my services in return for board and lodging.

During this summer session I took out lectures in therapeutics and a three-months' course in dissecting. I was also still attending at hospital. At the end of July I entered for the Second M.B. examination. This examination necessitated a journey to Scotland and a stay there of about a week. The subjects of examination were anatomy, physiology, and materia medica with therapeutics, and in each subject we had written, oral, and practical examinations. I was very glad to get it over.

I will now set down as nearly as I can the total cost of my three years' work:—

First Year Expenses.

	£	s.	d.		£	s.	d.
College fees ...	23	8	0	Clothing, washing, and personal ...	5	10	0
Books, instruments, hire of microscope, &c. ...	2	10	0	Travelling and hotel expenses ...	3	10	0
Examination fees ...	5	15	0				
Board and lodging ...	40	0	0	Total ...	85	13	0

Second Year Expenses.

	£	s.	d.		£	s.	d.
College fees ...	22	0	0	Clothing, washing, and personal ...	6	15	0
Books, instruments, &c. ...	3	0	0	Travelling and holiday expenses ...	3	0	0
Part for dissection ...	1	1	0				
Board and lodging ...	40	0	0	Total ...	75	16	0

Third Year Expenses.

	£	s.	d.		£	s.	d.
College expenses ...	15	15	0	Clothing, washing, and personal ...	5	10	0
Hospital fee ...	10	10	0	Travelling and hotel expenses ...	5	0	0
Parts for dissection ...	1	13	6				
Books and instruments ...	1	10	0	Total ...	86	4	6
Examination fees ...	6	6	0				
Board and lodging ...	40	0	0				

Probably the three years' work has cost me about 250*l.*; certainly not more. I have put down 40*l.* per annum as a reasonable amount to allow for board and lodging. As I was an indoor assistant, of course this amount might be written off each side of balance-sheet. Of the remaining 130*l.*, 85*l.* I received in the way of salary, 20*l.* I received as presents from different friends during the three years, and the remaining 25*l.* I borrowed from one of my relations. Of course I have been compelled to keep my expenses down as far as possible. I made my studies my hobby and recreation, and I think I can fairly say I have had a great deal of enjoyment out of my work.

If I had been working for the diploma of the Conjoint Board the expenses would be about the same. I should, however, have had this advantage—that during my two last years I should have had a better opportunity for obtaining an unqualified assistantship while attending hospital, because I should not have been tied to any particular town. I estimate that my next two years will cost me about 160*l.* Of this I shall hope to earn about 80*l.* before I qualify; the remainder I shall borrow.

So far it is my experience that any man of average ability who means to qualify can do so if he goes the right way about it, even though he has very little capital behind him. The examinations are not really stiff for anyone who has conscientiously worked through the necessary courses. The systematic work required by the medical curriculum is a most valuable training, and even if I were forced now to give up the idea of entering the medical profession, I should never consider the last three years as wasted.

I may mention that the medical school which I attended is one of the most expensive in the kingdom.

The cost of the medical curriculum experienced by this writer is about the average obtaining in the North. We refer to the matter further in an article beginning on page 424.

DENTISTRY.

THE Dentists Act was passed in 1878, and the General Medical Council was charged with its administration, including the keeping of a correct register of dental practitioners. Persons practising dentistry when the Act was passed were registered without examination, and pupils at that period were permitted to proceed to a qualifying examination without passing the Preliminary examination in general knowledge. The privileges which the Dentists Act confers upon those registered under it are (1) protection of titles, and (2) recovery of fees for dental operations. For a long time ardent dentists have maintained that the use of dental descriptions for premises is an infringement of the first part; but the Judges of the Scotch High Court consider that view to be erroneous, and that the Act merely protects personal titles. The Act does not prevent unregistered persons performing dental operations of any kind, nor prohibit them making the fact public, but they are not assisted by the Law Courts in recovering fees for work done.

Such is the dental law viewed from the commercial standpoint. From the professional we must regard it as a calling highly rated so far as education is concerned. The General Medical Council's regulations are as follows:—

Candidates for a diploma in dental surgery shall produce certificates—

- (i.) of having passed a Preliminary examination in general education;
- (ii.) of being 21 years of age; and
- (iii.) of having been engaged during four years in professional studies.

The Preliminary examination is the medical one (page 412), and as soon as the candidate passes it he should register as a dental student exactly as medical students do. The age (ii.) is fixed for the time that the candidate passes the Final Professional examination. The curriculum includes:—(1) General medical studies, (2) special dental subjects (lectures and hospital in both cases), and (3) three years' instruction in mechanical dentistry. It is provided that one year of (3) may be counted as part of the four years' professional study if taken after registration as a dental student; but the other two years may be concurrent with the dental-hospital work. The usual course taken is for a pupil to be articled to a dentist for three years—say at his sixteenth or seventeenth year. These three years give him the necessary certificate in mechanical dentistry, and he takes care to pass the Preliminary examination before, or soon after, being indentured. He may complete the pupillage before entering a dental school, or may begin the lectures on chemistry, physics, and anatomy in the last year, then devote his whole time for two or three years to the remainder of the curriculum. It is almost as expensive to become a dentist as a medical practitioner, but not so difficult; and the chances of a fair income after qualification are better in dental than in medical practice.

There are four dental licensing bodies in the United Kingdom—one in England, two in Scotland, and one in Ireland. The facilities for dental education are ample. The regulations of the licensing bodies are subjoined.

L. D. S. ENG.

The Royal College of Surgeons of England has during the past year introduced a notable alteration in the regulations for its dental diploma. Hitherto there has been only one examination, which was taken at the end of the curriculum and embraced all the subjects. Consequently it was a severe tax upon the candidates, and did not ensure a high standard of skill so much as efficient "grinding." The College now requires all those who register as dental students (men only, women not being examined by this College) after January 1, 1897, to pass three examinations. The first of these is in chemistry, physics, and practical chemistry, and the prescribed instruction in the subjects may be taken before registration as a dental student, and the examination may be passed before entering a dental school. The examination is

the same as for the "double qual." (page 415), and those who have passed that, or one of certain equivalent examinations, are exempted. This is called the "Preliminary Science examination." The second is the "First Professional examination," and can be taken after attending a dental hospital for six months in order to obtain class certificates for (a) a course of lectures on dental metallurgy; (b) a course of practical dental metallurgy; (c) a course of lectures on dental mechanics; (d) a course of practical dental mechanics, including the manufacture and adjustment of six dentures and six crowns. This is after registration as a dental student. The subjects of the examination are mechanical dentistry and dental metallurgy. The Third examination, called the "Second Professional," is in general anatomy and physiology, general surgery and pathology, dental anatomy and physiology, dental pathology and surgery, and practical dental surgery. Candidates are admitted to it when they are 21 and have completed the four years of professional study. They must produce certificates showing that they have attended at a recognised dental hospital and school:—

- (a) A course of dental anatomy and physiology.
- (b) A separate course of dental histology, including the preparation of microscopical sections.
- (c) A course of dental surgery.
- (d) A separate course of practical dental surgery.
- (e) A course of not less than five lectures on the surgery of the mouth.

Attended, at a recognised hospital, the practice of dental surgery during two years.

Attended, at a recognised medical school—

- (a) A course of lectures on anatomy.
- (b) A course of lectures on physiology.
- (c) A separate practical course of physiology.
- (d) A course of lectures on surgery.
- (e) A course of lectures on medicine.

Performed dissections during not less than twelve months.

Attended, at a recognised hospital or hospitals, the practice of surgery and clinical lectures on surgery during two winter sessions.

The fees for the examinations and licence amount to twenty guineas. For further information apply to the Secretary, Examination Hall, Victoria Embankment, W.C.

L.D.S. SCOT.

The Royal College of Surgeons, Edinburgh, and the Faculty of Physicians and Surgeons, Glasgow, grant this diploma separately. The General Medical Council has recommended that the Boards should be merged or one abolished. The Glasgow licence is, however, rarely taken, and the "Scotch L.D.S." and "L.D.S. Edin." are practically synonymous terms. The regulations of the Edinburgh College are almost the same as those of the English one, except that the former sticks more closely to the General Medical Council's requirements: *e.g.*, the Council prescribes materia medica, but that the English College long since dropped, and the Edinburgh College has retained. The Council now proposes to drop it also. A few other minor points of difference are observable in the Edinburgh curriculum, generally in the way of additional or extension subjects. The length of the curriculum is the same. There are two examinations—the first in anatomy, chemistry, and physiology, the second (at the end of the curriculum) in the remainder of the subjects. The fees are 5*l.* 5*s.* for the first examination, and 10*l.* 10*s.* for the second. Secretary to the College, Mr. James Robertson, 1 George Square, Edinburgh.

For particulars in regard to the Glasgow diploma (the conditions of obtaining which are practically the same as at Edinburgh, except that 6*l.* 6*s.* is payable for the first examination and 9*l.* 9*s.* for the second) apply to Mr. A. Duncan, B.A., 242 St. Vincent Street, Glasgow.

L.D.S. IREL.

The General Medical Council recently made the uncomfortable discovery that of 504 persons who have obtained the dental diploma of the Royal College of Surgeons, Ireland, since 1878, only 14 have passed *cum curriculum*. It was thought that the *sine curriculum* diploma had become almost extinct. However, it will interest many of our readers who are registered as dentists on the strength of having been in

practice before 1879, that this diploma is obtainable on the following conditions:—

Application for examination should be made on a form, obtainable at the College, setting forth a Certificate, signed by two Fellows, members or licentiates of a College of Surgeons, and by two L.D.S.Irel. (or two members of the British Dental Association, or of the Odontological Society), to the effect that applicant is of good moral character, has been for five years engaged in the practice of dentistry, is a registered dentist, and has not, during the last two years, attracted business as a dentist by advertising or other unbecoming practices. The last fact must also be attested before a magistrate, and the applicant must subscribe to a declaration that he will not advertise.

The candidate must pass the final examination in dental surgery—theoretical (including dental pathology), clinical, and operative; dental mechanics—theoretical, clinical, and practical (including the metallurgy of the workshop). Candidates must pass in all the subjects at the same time. Fee, 26*l.* 5*s.*

For the diploma *cum curriculo* there is also a primary examination in physics, chemistry (including metallurgy), anatomy, physiology and histology, and surgery. Fees for L.D.S. in this case 21*l.* For full particulars apply to the Registrar, Royal College of Surgeons, Dublin.

D.D.S.

Degrees in dental surgery granted by American Universities are not registrable in this country, and any unregistered dentist using a degree of that kind in such a way as to lead people to suppose that he is registered may be fined under the Dentists Act. But the D.D.S. (or its equivalent) may be used by registered persons. The degree may be obtained in New York, Baltimore, Philadelphia, Chicago, and other cities in the United States, less than a year's residence being requisite. An L.D.S. of the United Kingdom can leave here in September and return in March or April following with his D.D.S., or anyone who has studied six months in a dental college on this side may do the same. The fees amount to about \$150.

EDUCATIONAL INSTITUTIONS.

The subjoined list is restricted to the institutions recognised by the Royal College of Surgeons of England, and consists of (1) institutions in which the full dental curriculum

may be obtained (printed in large type); (2) those in which the dental hospital practice is recognised by the College (printed in smaller type). The General Medical subjects may, of course, be obtained at any recognised medical school or hospital (see p. 416).

LONDON.

Guy's Hospital Dental Department and School, Borough, S.E.—Dean, Dr. Shaw. Fees for L.D.S. Eng.,

Dental Hospital of London, Leicester Square, W.—Dean, Mr. Morton Smale. Fees for complete curriculum, 115*l.* 10*s.* in instalments.

National Dental Hospital and College, 149 Great Portland Street, W.

St. Thomas's Hospital Dental Department, Albert Embankment, S.W.

WESTMINSTER HOSPITAL DENTAL DEPARTMENT.

PROVINCIAL.

Birmingham: Mason College Dental Department.—Fees, 73*l.* 2*s.* Hon. Secretary, Mr. John Humphreys, 149 Edmund Street.

BRISTOL: ROYAL INFIRMARY DENTAL DEPARTMENT.—Dental and general hospital practice, 32 guineas. Four dental courses at the University College, 3*l.* 3*s.* each.

Dublin: Dental Hospital and School of Ireland, 25 Lincoln Place.—Dean, Dr. R. T. Stack. Fees, 73*l.* 10*s.*

Edinburgh: Dental Hospital and School.—Dean, Mr. Bowman Macleod, 16 George Square. Fees, 68*l.* 6*s.*

EXETER: DENTAL HOSPITAL, Castle Street.—Hon. Secretary, Mr. Henry Yeo.

Liverpool: University College School of Dental Surgery.—Dean, Professor H. M. Paterson. Fees, 73*l.* 2*s.*

Manchester: Owens College Dental Department.—Fees, 73*l.* 2*s.* Dean, Professor A. H. Young, M.B.

NEWCASTLE-ON-TYNE: ROYAL INFIRMARY DENTAL DEPARTMENT AND COLLEGE OF MEDICINE.—Secretary, Professor Howden.

PLYMOUTH: DENTAL HOSPITAL.

VETERINARY SURGERY.

THE VETERINARY SURGEONS ACT, 1881, imposes a penalty not exceeding 20*l.* on any person not on the register of veterinary surgeons who takes or uses the title of veterinary surgeon or veterinary practitioner, or any name, title, addition, or description stating that he is a veterinary surgeon or a practitioner of veterinary surgery or of any branch thereof, or is specially qualified to practise the same. The Act does not prohibit any unqualified person attending upon sick animals. It stipulates that those who wish to practise in a "regular" fashion and assume the title of "Veterinary Surgeon" shall conform to the education and examination regulations of the Royal College of Veterinary Surgeons, which is the veterinary equivalent of the Pharmaceutical Society, for it examines and registers. Its headquarters are 10 Red Lion Square, Bloomsbury, W.C. On fulfilling the conditions laid down in these regulations the College confers a diploma of membership (M.R.C.V.S.) upon the successful candidate. The idea that there is an English and a Scotch diploma is utterly erroneous, as there is only one board of examiners, which visits the centres at which veterinary schools are established. The conditions upon which the diploma is granted are:—

(1) The candidate must pass the Preliminary examination in general education recognised by the General Medical Council before entering for the first professional examination. [The College of Preceptors and the Educational Institute of Scotland conduct the examination.] (2) He must study at a recognised veterinary school for four years, and during that time (3) pass four professional examinations, viz.:—

EXAMINATION A.—Anatomy of domesticated animals: bones,

ligaments, joints. Chemistry and elementary physics. Biology: elementary zoology and botany.

EXAMINATION B.—Anatomy of domesticated animals. Histology and physiology. Stable management and manipulation of domesticated animals. Principles of shoeing.

EXAMINATION C.—Morbid anatomy, pathology, and bacteriology. Materia medica, pharmacy, therapeutics, and toxicology. Veterinary hygiene and dietetics.

EXAMINATION D.—Principles and practice of veterinary medicine and surgery. Clinical medicine, surgery, and obstetrics (horse and other domesticated animals). Meat inspection.

The candidate must be twenty-one years of age when entering for D.

The examinations are held in December and May, the fee for each being 5*l.*, and the registration fee 1*l.* Women are not admitted to the examinations; but it is proposed to test the legality of that regulation of the Royal College's. The following are the

RECOGNISED EDUCATIONAL INSTITUTIONS.

We print the briefest particulars, and advise all enquirers to consult the prospectuses of the Colleges for fuller information.

Royal Veterinary College, Great College Street, Camden Town, London, N.W.—Educational fee, 84*l.*, paid in four instalments, and 2*l.* 12*s.* 6*d.* library fees. Principal and Dean, Mr. John McFadyean, M.B., M.R.C.V.S. Secretary, Mr. R. A. N. Powys.

Royal (Dick) Veterinary College, Clyde Street, Edinburgh.—Matriculation and education fees, 58*l.* 16*s.* Principal, Professor J. R. U. Dewar, F.R.C.V.S. Secretary, Professor A. E. Mettam, B.Sc., M.R.C.V.S.

The New Veterinary College, Leith Walk, Edinburgh.—Matriculation and education fees, 58*l.* 16*s.* Principal, Professor William Williams, F.R.C.V.S.

Glasgow Veterinary College, Buccleuch Street, Garnet-hill, Glasgow.—Fee, 60*l.*, or 63*l.* in instalments. Principal, Professor McCall, F.R.C.V.S. Secretary, Mr. Robert Dobbie.

Single classes may be taken at any of the Colleges by those who wish to improve their veterinary knowledge without becoming a 'vet.'

PROFESSIONAL SCIENCE.

Of all professional callings none are entered on so much from personal liking as science. Divinity, law, and medicine in its various branches ensure for their followers social position, and in most cases a fair income; but science cannot be said to do either, the effort of the individual being the main thing, for there is no "class" assurance in the matter. We are now referring particularly to the physical sciences which are more or less professional—*e.g.*, chemistry and electricity. Engineering is beyond our province, and the natural sciences have not yet developed into sufficiently large professional branches to merit collective attention.

It frequently happens that those who enter upon a scientific training in their spare hours obtain in the course of a few years such a comprehensive knowledge of several branches of science and a distaste for their own calling that they wish to devote themselves solely to science. The outlets for such men are chiefly in the direction of teaching (*e.g.*, under a County Council technical education scheme) or in some Government appointment, obtainable by examination (*e.g.*, Patent Office or British Museum). These are adventitious professions, and the incomes, except in Government appointments, are precarious. What we especially desire to treat of now is the different classes of scientific occupations which chemists train for in this country. These are:—

ANALYSTS (public or private).—The course of training consists of pupilage with an analyst for three years, study of sciences in a college, and working for the fellowship of the Institute of Chemistry.

ANALYSTS (in chemical or other works) similar to the foregoing, but supplemented by special technical classes.

WORKS CHEMISTS.—A three years' course in a technical college in chemical and physical science, without special reference to any particular industry; preparation for a science degree, supplemented by a course of research in a subject which is likely to lead to practical results, identify the worker's name with that branch of knowledge, and especially to foster his power of initiative and discovery.

These, it should be understood, are not universal methods of preparation, but they are amongst the best. We wish it to be perfectly clear that even when a young man has had a distinguished career at college, and has taken all the academical and other honours available to him, that it by no means follows that he will get occupation at once. It frequently happens that the best-trained men have to wait for years before they can get a position at all commensurate in remuneration with the expense of their training. But when business ability is connected with scientific training and originality of mind, the possessor can in most cases work himself into the best position in his line. There are many capable young chemists in this country earning less than 100*l.* a year, but the number earning nearer 1,000*l.* is by no means small.

There are in this country about five-and-twenty first-class science colleges, and many hundreds of schools at which scientific instruction is given in evening classes. All the first-class colleges have a systematised curriculum of study extending to two or three years, the curricula varying considerably, according to the industries of the districts in which the colleges are situated, because one object of these colleges is to improve the local industries by technically educating the workers, overseers, and the proprietors of factories. We cannot treat of these arrangements here, and merely indicate the nature of the general courses prescribed for qualification.

F.I.C.

The Institute of Chemistry, 30 Bloomsbury Square, W.C., was founded for the purpose of giving a qualification to professional chemists, and the Fellowship of the Institute is now publicly recognised as a qualification. In order to become an F.I.C. the student must pass a Preliminary examination recognised by the General Medical Council, and be registered at 17 years of age by the Institute as a student. Fee, 2*s.* 6*d.* He may then be articled to an analytical

chemist, or enter a three years' course of science at a university college. If articled to an analyst, a two years' course is required. At the end of the course the Intermediate examination of the Institute may be taken. It is in theoretical and practical chemistry. Fee, 2*l.* 2*s.* Following this comes a final examination in practical chemistry, which lasts four days. The fee is 3*l.* 3*s.* This gives the associateship, and after two years the fellowship is conferred.

SCIENCE DEGREES.

B. Sc. Lond. Ten universities in this country grant the degree of Bachelor of Science, but only one grants it without curriculum—*viz.*, the London University. All candidates for this degree must matriculate (see page 413), and a year thereafter they may enter for the Intermediate examination in chemistry, physics, mathematics, and biology. Fee, 5*l.* The examination is held in London and the provinces. A year after passing the Intermediate the B. Sc. examination may be taken in three subjects—*e.g.*, chemistry, physics, and botany. Fee, 5*l.* See the University Calendar for full particulars.

R. Sc. Vic. The conditions upon which the Victoria University grants its science degree are much akin to those of London, but three years' curriculum must be taken, and one of the years at one of the affiliated colleges of that University.

B. Sc. Durh. Here the conditions are precisely the same as those of the Victoria University, except that passing the Preliminary examination in arts of the University is compulsory, there being no exemption as in Victoria. The conditions in the Scotch Universities are

B. Sc. Scot. akin to those of Victoria. A Preliminary examination somewhat stiffer than the Medical Preliminary has to be passed, and thereafter the student must spend three years in the University from which he desires the degree, although two of the years may be spent elsewhere. There are two Professional examinations, and a variety of departments in which the degree may be taken—*e.g.*, chemistry, natural science, agriculture, engineering, public health, &c.

B. Sc. Wales. The University of Wales also grants a science degree to students of its colleges—*viz.*, Aberystwith, Cardiff, and Bangor. The conditions are the same as at the Victoria University. Particulars regarding the whole of the foregoing can be obtained from the secretaries. The Oxford and Royal Irish Universities grant the B.Sc. to their B.A.'s.

Ph. D. By residence in a German University for two years, the first of which is devoted to class and laboratory work, and the second to a research and passing the prescribed examinations (which are not stiffer than the English ones), the degree of Doctor of Philosophy is obtained. It is much sought after, because the practice in the laboratories under distinguished chemists is found to be of great value. This study is, however, taken as supplementary to a British course. The London Matric. serves for matriculation in the leading German Universities.

EDUCATIONAL INSTITUTIONS.

The following is the briefest possible abstract of the curricula in the more important schools of science in this country:—

Metropolitan.

ROYAL COLLEGE OF SCIENCE, South Kensington, S.W.—This is the Government college, at which Queen's and other scholarships receive their education. There are eight branches of science in which the associateship of the college is granted—*viz.*, mechanics, physics, chemistry, biology, geology, agriculture, metallurgy, and mining. The course is three years, during the first of which all attend the same subjects—chemistry, physics, astronomical physics, mathematics, and drawing. Then they branch off in the second year, and specialise in the third. The fees for the three years' course amount to about 11*l.* Few

vacancies occur for private students. The following scholarships, &c., tenable at the college, are offered annually by the Government to those who attend the science classes throughout the country:—Four Royal Exhibitions, value 50*l.* a year and free tuition (three years); twenty-two National Scholarships, 30*s.* a week and free education for three years; six free Studentships, tenable for three years. Full particulars regarding these and other scholarships will be found in the "Science Directory," to be obtained from Eyre & Spottiswoode at 6*d.* Whitworth and other scholars (e.g., I.R. chemists) also attend the college. The prospectus of the college may be obtained from the same publishers, price 6*d.*

CENTRAL TECHNICAL COLLEGE, Exhibition Road, S.W.—At this College the ideal course of training in chemistry is obtainable. None under sixteen are admitted, and all must pass a Preliminary examination in mathematics and mechanics, chemistry, physics, and French or German. The course of instruction lasts for three years, and is similar to that at the Royal College, the last year being devoted to the subjects in which the student desires the diploma—e.g., chemistry, electrical engineering, &c. The fees amount to 25*l.* a year. A number of valuable scholarships are offered. For prospectuses apply to the head office of the City and Guilds of London Institute, Gresham College, Basinghall Street, E.C.

THE TECHNICAL COLLEGE, Leonard Street, City Road, E.C.—This is also a City and Guilds College. The education is on the same lines, but does not aim at being so advanced, and the course extends to two years, the fees for that period being 30*l.* Evening classes are held. The College is a good one at which to study for the F.I.C. or B.Sc.

UNIVERSITY COLLEGE, Gower Street, W.C.—Faculty of science. The whole of the subjects for B.Sc. are taught, and the lecture fees are from 4*l.* 4*s.* to 7*l.* 7*s.* per course per subject. Practical chemistry, 26*l.* 5*s.* per session. Secretary, Mr. J. M. Horsburgh.

KING'S COLLEGE, Strand, W.C.—Fees are about the same as at University College. Evening classes are held.

CITY OF LONDON COLLEGE, White Street, Moorfields, E.C.—Evening classes in all science subjects, fees for members 4*s.*, for non-members 6*s.* 6*d.* per course of lectures.

GOLDSMITHS' COMPANY'S TECHNICAL AND RECREATION INSTITUTE, New Cross, S.E.—Excellent instruction in chemistry and allied subjects is obtainable in evening classes at 5*s.* to 10*s.* 6*d.* per session per subject. Secretary, Mr. J. S. Redmayne.

BIRKBECK INSTITUTE, Bream's Buildings, Chancery Lane, E.C.—Similar to the last two schools as regards subjects and fees.

Evening classes in science subjects suitable for the Minor and B.Sc. are held at the Polytechnic, Regent Street, W.; the Polytechnic Institute, Borough, S.E.; the People's Palace, Mile End Road, E.; and the Carpenters' Institute, Stratford.

Provincial.

ABERYSTWYTH.—*University College of Wales*.—Fees for the science course, 10*l.* per session. Registrar, Mr. T. Mortimer Green.

BANGOR.—*University College of North Wales*.—Terms as at Aberystwyth. Secretary and Registrar, Mr. J. E. Lloyd.

BIRMINGHAM.—*Mason College*.—Fees for the science classes 4*l.* 4*s.* per session in the day classes. Evening classes are held. Secretary, Mr. George H. Morley.

Municipal Technical School, Suffolk Street.—Evening classes. Lecture fees 2*s.* 6*d.*, laboratory 5*s.* per subject. Secretary, Mr. George Millor.

BRISTOL.—*University College*.—The fees for the science classes are moderate. Secretary, Mr. James Rafter.

CARDIFF.—*University College of South Wales and Monmouthshire*.—Fees for science classes, 10*l.* per session. Registrar, Mr. J. A. Jenkins.

DUBLIN.—*Royal College of Science*.—The course of instruction is similar to that in the London Royal College, but the fees are lower. Government scholarships are also held here.

DUNDEE.—*University College*.—Botany, chemistry, and physics are taught in day classes, and chemical technology in the evening at the Technical Institute. Secretary, Mr. R. M. Kerr.

EDINBURGH.—*Heriot-Watt Institute, Chambers Street*.—Day and evening classes are held in all science subjects. Chemistry day lectures 4*l.* 4*s.* per session, including laboratory.

GLASGOW.—*The College of Science* (Anderson's).—Day and evening classes are held, and the fees are low.

LEEDS.—*Yorkshire College*.—The instruction is adapted to the Victoria University degrees and various diplomas. Evening and special classes are held. Fees moderate. Secretary, Mr. W. F. Husband, L.L.B.

Leeds Technical School, Cookridge Street.—The evening classes suitable for students of pharmacy are in inorganic and organic chemistry, physics, and botany. Fees for session: Any elementary course, 2*s.* 6*d.*; and any advanced course, 3*s.* 6*d.* Practical work, 5*s.* to 12*s.* 6*d.* per session. In the practical chemistry facilities are afforded for volumetric analysis and the inorganic and organic preparations specified in the Minor syllabus. Prospectuses may be obtained on application to the Secretary.

LIVERPOOL.—*University College*.—Instruction as at Leeds College. Registrar, Chevalier Londini.

MANCHESTER.—*Owens College*.—The scientific courses at this college relate to pure science and the local industries. There are day and evening classes. Secretary, Mr. H. W. Holder.

NEWCASTLE-UPON-TYNE.—*Durham College of Science*.—Fees for curriculum of B.Sc. Durham 56*l.* Day and evening classes are held. Secretary, Mr. H. F. Stockdale.

NOTTINGHAM.—*University College*.—Day science lecture fees 2*l.* 2*s.* per term. Evening classes are held. Secretary, Mr. P. H. Stevenson.

SHEFFIELD.—*Firth College*.—Day and evening lectures in most science subjects are given at low fees, also practical instruction.

BELFAST.—*School of Science and Technology*.—Has a pharmaceutical department and lectures and laboratory teaching in the common science subjects.

There are many other science schools besides the foregoing in the country, but these notes serve to show what it is possible for students of chemistry and pharmacy to get at their own doors.

Many of the University Colleges now have special courses in agriculture, such as the course pursued at the Cirencester Agriculture College, where in three years students are thoroughly instructed in the science and practice of agriculture. Amongst the colleges which have followed the Cirencester example are the Aberdeen, Edinburgh, and Glasgow Universities, Durham College of Science, the University Colleges of Wales, Leeds, and Nottingham, Anderson's College, Glasgow, while County Council technical schools make a speciality of agricultural instruction.

SOMETHING TO TRY FOR.

CHEMICAL ANALYSIS PRIZES.—Every month the proprietors of THE CHEMIST AND DRUGGIST offer for competition by students of chemistry and pharmacy two book prizes, which are awarded to those sending in the best report of a qualitative analysis of a mixture of salts sent to those who apply for it. Certificates and more valuable book prizes are also awarded to those who do best in a six months' tournament.

PHARMACEUTICAL SCHOLARSHIPS.—The Pharmaceutical Society of Great Britain offers annually three Educational and two or three Research scholarships—viz., two Bell scholarships, value 30*l.* for one year and free education in the School of Pharmacy (Minor and Major courses), and one Manchester Association scholarship, value 26*l.* without free education. The examinations for both are the same, and are held in July yearly. The Bell scholarships are open to students of the Society between 20 and 22, and the other to students between 19 and 21 residing in Lancashire, Cheshire, and the High Peak District of Derbyshire. The subjects of the examination are English, arithmetic, Latin (Virgil, Cæsar, and medical Latin), French or German, and elementary botany, chemistry, and pharmacy. Applications for admission must be lodged before June 1 with Mr. Richard Bremridge, 16 Bloomsbury Square, W.C. The Research scholarships are the Redwood and S. M. Burroughs Memorial, each of the value of 30*l.*, awarded to pharmaceutical chemists only by the Pharmaceutical Council, and the Salters' fellowship, value 100*l.* a year for three years. These are tenable in the Society's laboratories. The Burroughs scholarship is awarded biennially.

HERBARIUM PRIZES.—The Pharmaceutical Society of Great Britain annually offers silver and bronze medals and certificates to students of the Society under 21 for herbaria of British plants collected between January 1 one year and July 1 in the year following, the specimens being properly mounted, named, and arranged according to a recognised system of classification.

MEDALS are offered by both the Pharmaceutical Societies to pharmaceutical chemists. The Irish Society's gold medal is given to the L.P.S.I. candidate who stands highest during

the year, provided he takes not fewer than 240 marks out of a possible 300, and 65 in each of three divisions. A silver medal is awarded to the second best, if 230 and 60 marks respectively are taken by him. The British Society's medals are offered annually for competition amongst pharmaceutical chemists who were associates of the Society when they passed the Major. The examination is held in July, and is in the Major subjects, but somewhat more advanced, and the awards are the Pereira medal, in silver, and books value 5*l.*; a Council silver medal, and a Council bronze medal. A certain standard must be attained in each case, and under this rule only the first-mentioned medal has been awarded this year.

THE RESEARCH FELLOWSHIP of the Pharmaceutical Society of Great Britain is conferred upon pharmaceutical chemists who have worked in the Society's Research Laboratory, and published, or submitted to the Research Committee, a thesis containing the results of some research carried on by the applicant independently. Only two gentlemen possess the honour.

NAVAL HOSPITAL DISPENSERSHIPS.—These are Government appointments in naval hospitals at home and abroad, viz.:—Haslar, 4; Plymouth, 3; Haulbowline, 1; Chatham, 1; Malta, 1; Cape of Good Hope, 1; Jamaica, 1; Bermuda, 1; Hong-Kong, 1. Candidates must not be over 25 years of age, and must possess certificates showing that they hold either the Major or the Minor qualification of the Pharmaceutical Society of Great Britain or the certificate of competency granted by the Pharmaceutical Society of Ireland. Pay begins at 5*s.* per day, and rises to 10*s.* after twenty-two years' service, with some allowances and quarters. Dispensers serving at Malta and the Cape of Good Hope get 2*s.*, at Jamaica and Bermuda 3*s.*, and Hong-Kong 4*s.* additional per day. Dispensers are provided with quarters or with the equivalents thereof, and the keepers of stores receive an extra payment (1*s.* or 2*s.* per day). Vacancies are advertised in *THE CHEMIST AND DRUGGIST* when they occur (there was one last month). Candidates should obtain from the Secretary of the Civil Service Commission, London, S.W., a form of application, and on acceptance of this by the Commissioners, candidates are informed when the examination will take place in London, Edinburgh, and Dublin. The examination is in the following subjects:—(1) Pharmaceutical chemistry; (2) materia medica, including the British Pharmacopœia and its Appendix, poisons and their antidotes, dosage of remedies, and preparation of antiseptic solutions; (3) recognition of chemicals and drugs employed in medicine; (4) practical pharmacy, reading of prescriptions, and detection of errors in prescribing. The examination in subjects (3) and (4) is *vis à voce*. Fee for the examination, 10*s.* Naval dispensers come under the ordinary regulations for superannuation.

There are no dispenserships corresponding to the foregoing in the Army, and it should be understood that these are not in the Navy. Army compounders are members of the Medical Staff Corps, who have enlisted in the ordinary way, and worked themselves up to the position.

POOR LAW DISPENSERSHIPS are open to chemists and druggists, Irish pharmaceutical chemists, apothecaries, apothecaries' assistants, and members of the Medical Staff Corps (retired). These appointments are generally advertised in *THE CHEMIST AND DRUGGIST SUPPLEMENT* as they become vacant. They are of the annual value of 120*l.*, increasing by increments of 5*l.* to 150*l.* per annum. **DISPENSERSHIPS IN PRISONS** are open to chemists and druggists only. The pay is the same as in the Poor Law service.

INLAND REVENUE LABORATORIES.—To get an appointment in these laboratories candidates must compete for vacancies in the Excise (as assistants) between 19 and 22. The examination is in handwriting, arithmetic, English composition, higher arithmetic, and general geography. The salary begins at 85*l.* per annum. Such assistants compete amongst themselves for the vacancies in the laboratory, and, if appointed, they receive at least two years' tuition in the Royal College of Science, their salary running meanwhile. Full particulars will be found in the "Civil Service Manual" (1*s.* 6*d.*), which may be obtained through any bookseller.

EXAMINERS IN THE PATENT OFFICE.—These appointments are also open to competition, and are suitable for

those who have made a hobby of science. The assistantships (salary to begin with 200*l.*) are open to men between 21 and 25. There is a Preliminary examination in handwriting, orthography, arithmetic (to vulgar and decimal fractions), and English composition; and a Competitive one in précis, geometry (elementary and practical), mechanical drawing, mechanics and mechanism, chemistry, electricity and magnetism, hydrostatics, hydraulics, and pneumatics.

GOVERNMENT MEDICAL APPOINTMENTS.—The Army and Indian Medical Services offer a good opportunity for smart young medicos who wish to gain experience at no cost to themselves. Vacancies in the services are advertised as they occur, and candidates enter for a Competitive examination. They must be registered medical practitioners under 28 years of age, of pure European descent, for the army, and natural-born subjects of the Queen for the Indian service. The examination is in surgery, medicine (including therapeutics), diseases of women and children, chemistry and pharmacy, and a practical knowledge of drugs. Those who obtain appointments proceed to Netley Hospital for a course of special training, and while there receive 8*s.* per day. On appointment to the rank of surgeon-lieutenant in the army the pay is raised to 200*l.* a year. In the Indian service the pay begins at 350*r.* per month. Pay may increase with advancement in rank to 2,500*l.* a year, and 2,700*r.* per month. On retiring from the army at the end of ten years with the rank of captain a gratuity of 1,250*l.* is paid, and for longer services and higher ranks a proportionate increase or pension. The Indian service secures a pension of 365*l.* a year after twenty years' service.

The Royal Navy also offers similar appointments. Pay begins at 11*s.* 6*d.* per day, and may increase to 2*l.* 15*s.*, with allowances. Gratuities and pensions after eight years' service, beginning at 1,000*l.* and increasing to 2*l.* per day after thirty years' service with the highest rank.

ARMY VETERINARY DEPARTMENT.—Appointments for registered vets. in this department are open on similar conditions to those pertaining to Army surgeons. The examination is in professional subjects. Anyone successful in it is appointed a V.S. on probation for six months, and if he does not prove satisfactory during that period he must quit without compensation. If satisfactory he is drafted into the service as veterinary lieutenant with a salary of 250*l.*, and it is possible to increase that to 850*l.* The retiring allowances begin after ten years' service with a gratuity of 800*l.*

Book Notes.

IT is a dozen years since the late Professor Bedford, of New York, published Mr. Hans M. Wilder's translation of Schneider's "List of Tests," and although the book was and is appreciated by those who know it, we believe we are right in saying that the publisher never made a cent out of it. The style of the book is exceedingly good, as the tests are given alphabetically according to the names of the originators, and an index of substances gives the further references desired. Schneider's original work has recently been revised by Dr. Julius Altschul, and an English translation of the revised work by Mr. Richard Fischer has been reprinted in pamphlet form from the *Pharmaceutical Review*.^{*} We must say that Mr. Wilder's text is much better, because more accurate, than this new one, and were it not for the recent tests which are included we question if the translation had been worth reprinting, and that is not a thing that can often be said of articles which appear in the *Pharmaceutical Review*.

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Mr. M. M. Pattison Muir, M.A., is scarcely the Ishmael of British chemistry, but he can always be depended upon if something has to be done which requires courage or a complete departure from conventionality. Whether it is disagreeable or unpopular does not appear to matter much to him. The other day he "slated" unmercifully a book which Professor Tilden has created out of old Fownes, and the author's reply was that everybody else had praised it. We

^{*} *Reagents and Reactions*. "Pharmaceutical Review" Publishing Company, Milwaukee. 82 pp. Paper covers. 50c.

were in a somewhat similar position with Mr. Muir a year ago, when we criticised a trifling work of his, and now we have presented to us a book of "Practical Chemistry"* by him, which is of quite a different character, and which exhibits that originality which he displays in the field of polemics. The book is the first part of three which are to make up a new system of teaching chemistry practically. He is convinced that beginning with qualitative analysis is a mistake (there we agree with him to the full), and so he presents in this elementary part a series of fifty-two lessons which illustrate to the student chemical change, the preparation of compounds, reactions of acids, alkalies, and salts, volumetric analysis and qualitative analysis of mixtures of salts containing not more than a single metal in any one group. The thing is remarkably well done, and whether the student works alone or under a teacher he cannot fail at the end of the fifty-two lessons to be well grounded in the principles of chemistry. If every student of pharmacy would at the age of 18 take this book and work through it leisurely a lesson per week, he would at the end of the year know more about chemical and pharmaceutical operations than 90 per cent. of those who pass the Minor examination.

Mr. H. Wootton, B.Sc., of Westminster College, has done a useful piece of work by bringing together all the questions given in the Major examination (written portion) since the new style was introduced. It was an easy thing to reprint the questions, but Mr. Wootton has done more than that—he has arranged them according to the subjects—*e.g.*, alcohols, alkaloids, leaves, &c. The result is highly instructive to students, and it is amusing to those who have passed that stage to notice the strong and weak points of the examiners. There are no comments in the book at all; still it is useful and cheap (1s. 6d.), and is published by Messrs. Simpkin, Marshall & Co. (Limited).

The study of sound, light, and heat as sketched in the South Kensington elementary stage is, we consider, an essential part of the education of all chemists and druggists. The course only occupies six months, and during it the student may acquire more knowledge of the subject than examiners expect Minor candidates to have. It is necessary, however, that the lectures should be supplemented by home-reading of a good text-book,† such as that which has just been compiled by Mr. John Don, who possesses the somewhat rare faculty of clear exposition; indeed, in all that we have read of his book we have observed only one failure, and that is in describing the ether as resembling "an exceedingly rarified gas." Probably that may not seem so ridiculous to students as to us, who cannot get rid of the molecular idea even in rarified gases, and the ether is not molecular. We do not instance this as a fault, however, for Mr. Don's book is for matter, manner, and cheapness one which we can commend to pharmaceutical students of physics.

M. H. Bocquillon-Limousin's "Formulaire des médicaments nouveaux"‡ is now an established annual, and we would think it is an indispensable book to French pharmacists. The author keeps it well up to date, conveys his information tersely, and it is practical and to the point.

"The Pocket Therapist"§ which Dr. Stretch Dowse has recently written for the benefit of young practitioners will, we imagine, be as great a favourite with old practitioners. It tells just what the prescriber often wants to know, gives needed suggestion, and as it is arranged alphabetically, on the basis of the names of the diseases, and can be slipped to the pocket, we expect that few practitioners will be without it. There is scarcely a page of the book which does not contain an ingenious and original suggestion, and the descriptions (although too frequently polypharmic) are valuable.

* *A Course of Practical Chemistry*, by M. M. Pattison Muir, A. Part I.; Elementary. Small 8vo. xiv and 319 pp. Longmans, Green & Co. 4s. 6d.

† *First Stage Sound, Light, and Heat*, by John Don, M.A., Sc. Small 8vo. 308 pp. 2s. W. B. Clive. (Organised Science Series.)

‡ J. B. Baillière et fils, Paris.
John Wright & Co., Bristol. 5s.

New Books.

Clowes, F., and Coleman, J. B. *Quantitative Chemical Analysis, for Laboratories of Colleges and Schools*. 4th ed. Cr. 8vo. Pp. 608. 10s. (Churchill.)

Coeke, J. R. *Hypnotism: How it is Done; its Uses and Dangers*. 12mo. (Boston) London. 7s. 6d.

Hartridge, G. *The Ophthalmoscope: Manual for Students*. 3rd. ed. Cr. 8vo. Pp. 174. 4s. 6d. (Churchill.)

Mayhew, E. *Dogs: their Management*. With illus. depicting position of dog when diseased. (Partly rewritten by A. J. Sewell.) Cr. 8vo. Pp. 318. 5s. (Routledge.)

Wootton, H. *Major Examination Questions set at the Pharmaceutical Major Examination from 1892 to 1897*. Cr. 8vo. Pp. 60. 1s. 6d. (Simpkin.)

Trade-Marks Applied for.

(From the "Trade Marks Journal," August 25, 1897.)

Device of medal, bearing the words "Blood-mixture, for saving life"; for chemical substances prepared for use in medicine and pharmacy, but not including tonic bitters or any goods of a like kind. By Mary Jalland Wright, Cloud House, Stapleford, Notts (no occupation). 204,434. Essential particular: the device.

"BOSVIM"; for a medicated wine. By J. A. Terry, trading as the Vinceter Company, 57 Webb's Road, New Wandsworth, Surrey, wine-merchant. 206,475.

Label, with device, facsimile signature, directions, and other wording; for a medicine for human use. By the firm trading as Robert Hare, 3 The Downs, Altrincham, Cheshire, medicine manufacturers and vendors. 205,484. Essential particulars: the device and facsimile signature.

"KITHONE"; for a medical specific for the cure of cancer, for human use. By Gwilt Griffith, 7 Wilson Street, Gray's Inn Road, London, W.C., commission agent. 205,879.

(From the "Trade Marks Journal," September 1, 1897.)

Representation of ship's steering wheel and the words "A' RICH'T." and "OPAL"; for chemical substances used for agricultural, veterinary, sanitary purposes, &c.; also sketch of country stile, for medicated soap. By W. Gossage & Sons (Limited), Widnes, soap manufacturers. 206,551–205,588. Essential particular: the device.

Symbolical device including sketch of bear and shield; for chemical substances prepared for use in medicine and pharmacy, but not including cod-liver oil, sugar of milk, or chloralose, in Class 3; also for perfumery in Class 48. By the Basle Chemical Works, Bindschedler, 90 Nienhausweg, Basle, Switzerland. 205,052–3.

Figure of colonial miner holding bottle bearing initials G.R.C., and wording "The Welsh Golden Rheumatic Cure," &c.; for a liquid medicine for human use for the cure of rheumatism. By G. Davis, 4 Bridge Street, Aberystwith; iron merchant. 205,075. Essential particular: the device.

Facsimile signature of applicant; for chemical substances prepared for use in medicine and pharmacy. By Alfred Bishop, 17 Speck's Fields, 48 Spelman Street, Mile End New Town, London, E.; manufacturing chemist. 206,247.

"REINDEER"; for glycerine prepared for use in medicine. By C. Thomas & Brothers (Limited), Broad Plain Soap-works, Bristol. 206,537.

Facsimile signature of applicants; for chemical substances prepared for use in medicine and pharmacy. By Brooks & Co., May Villa, Chilwell, Beeston, Notts; manufacturers. 206,582.

"HYPERION"; for substances used as food or as ingredients in food. By Owen Wallis, 189 Wardour Street, London, W.; pharmaceutical chemist. 206,228.

Facsimile signature of applicants; for diastased farina, being a substance used as an ingredient in food. By E. Beanes & Co., Falcon Works, Wallis Road, Hackney Wick, London; manufacturers. 206,377.

"CYNTHIA"; for a toilet preparation for the skin. By J. P. Riddle, 1 and 2 Frederick Street, South Shields; chemist and druggist. 206,083.

"CERONA"; for toilet soap, being perfumed soap. By S. Bergheim, 62 Gray's Inn Road, London, W.C.; merchant. 206,268.

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EDUCATIONAL.

THE Pharmaceutical Society's schemes for improving the
culture of the trade and getting some more cash for itself
being still in the womb of futurity, there is little change to
record in the Education and examinations of our craft. The
first result of the extension of the curriculum at the School
of Pharmacy has been to allow the Pereira medal to go past
the school and light upon a Wills student, while the
examiners did not find amongst the rest of the candidates
any sufficiently worthy of the second and third prizes, which
is a strange thing, considering that these men had passed
the Major examination. We are able to add this year to the
prize-list the medals of the Irish Society which, it will be
observed, are awarded to licentiates, irrespective of their
connection with the Society. The British Society reserves
its honours for its own members. We give special attention

to medical education to-day, because it is becoming more and more apparent that the General Medical Council is setting the standard of primary general knowledge for the professions. The same Preliminary examination does for dentistry, veterinary surgery, and science, and the Pharmaceutical Council propose it as the successor in 1900 to the present Preliminary. One effect of this uniformity may be that many will be drawn into the medical profession who would not otherwise have thought of it. As far as we can judge, the tendency that way appears to be growing in pharmacy, and the strangest of all reasons is given for it—viz., want of capital to start a pharmacy. It seems to be the case that pharmacy-trained men rarely fail to make a competency in medicine, while a comparatively large proportion of them attain to high positions in the profession. Is it not possible that they would have succeeded as well in pharmacy? Probably not, because many of them are men in whom the commercial spirit is not so highly developed as to be best fitted to meet the competition now all around us. They have the inquiring, scientific spirit which goes largely to make a successful medical practitioner. Some may have aspirations after social status, and crotchets of the kind, which may count for something; indeed, we have sometimes been asked by men who are tender on that point not to let it be known that they have been connected with pharmacy, lest the fact should damage their professional status. But that is a trifle, and there is no explanation in all these statements of the primary reason for taking to medicine because of want of capital. In pharmacy everyone, with few exceptions, supports himself after apprenticeship, and only finds it necessary to get together 60*l.* to 100*l.* in order to meet the expense of training for the Minor. This is only one-tenth of the cost of the medical curriculum and diploma, if we may rely upon the *British Medical Journal's* estimate, which is shown in the following figures, A being a five-years' course for the "double qual.," and B a six years' one for that and M.B. Lond.:—

	A			B		
	£	s.	d.	£	s.	d.
Composition-fee for school and hospital	115	0	0	157	10	0
Extra fees (vaccination, fevers, maternity, &c.)	4	4	0	6	6	0
Materials, chemicals, and "parts"	6	6	0	6	6	0
Clubs... ..	5	5	0	8	8	0
Instruments	10	10	0	10	10	0
Books	10	10	0	10	10	0
Diploma-fees	36	15	0	63	0	0
Maintenance (215 weeks at 30 <i>s.</i> , and 260 weeks at 45 <i>s.</i> a week respectively)	322	10	0	585	0	0
Clothing at 20 <i>l.</i> per annum	100	0	0	120	0	0
Total	£311	0	0	£967	10	0

We believe these estimates to be somewhat high, for a chemist's assistant tells us in an article on page 416 that he has had three years of the curriculum, and it has cost him 250*l.*, while the ultimate cost will be 410*l.* This is an exceptional case, and we should say that 500*l.* is needed to become a medical practitioner; in other words, a chemist's assistant should have no more difficulty in saving 200*l.* in five years than he has in spending that sum on medical education and examinations. That would go a long way towards putting him into a good business. We call attention to this matter because it affords an excellent example of self-reliance: given that, and the ability to pass the examinations, and we have the assurance of success.

THE UNQUALIFIED MEDICAL DISPENSER.

NOT often has the attention of chemists been directed to a subject of greater importance than that which was dealt

with in the article we published last week under the title of "Dispensing in Doctors' Surgeries by Unqualified Men." The purport of that treatise was that in regard to the compounding and sale of scheduled poisons in this country the provisions of the Pharmacy Act are more often disregarded than obeyed. The writer claimed that in his pre-qualified days he had infringed the statute hundreds of times, and he expressed his belief that at least three-fourths of the medicines prescribed and taken in this country are dispensed by unqualified men.

We have thought over that assertion, and have come to the conclusion that the estimate is within the limits of truth. In nine-tenths of the metropolitan area, and probably to almost the same extent in our provincial large towns, and almost exclusively in the majority of our smaller towns, the exceptions being only a few fashionable places, medicines prescribed by qualified medical men are dispensed from their own surgeries. By whom? In the majority of cases by persons who hold neither a medical nor a pharmaceutical qualification.

Is this an infringement of the Pharmacy Act? That depends on the conditions under which the dispensing is done. In the first place, the Pharmacy Act can of course be infringed only when a scheduled poison forms part of the medicine compounded; and in such instances only when the compounder is unqualified, himself "sells" the medicine, and does this not under the supervision of his employer or of some other legally qualified person.

First, then, do the medicines supplied by the general medical practitioner or the dispensary proprietor contain scheduled poisons? It is common knowledge that a large proportion of them do. One bottle in three, we are told by one informant; one in five is the calculation of another. Next, we believe we are right in assuming that the cases where these medicines are compounded by the medical man himself or by a qualified assistant are in the minority. But it is not illegal in Great Britain, though it is in Ireland, for an unqualified person to compound the prescriptions of a doctor, with or without supervision, even though these contain poisons; the illegality only comes in when the unqualified person actually "sells" the medicine. Does this occur? We have no hesitation in saying it does hundreds of times every day. Note the instance specified by our contributor. The doctor saw the patient in one room, gave a prescription, which the patient took to the unqualified dispenser in another room, getting the medicine from him, and sometimes paying him for it. Was not that "selling"? Of that we imagine there cannot be much doubt. In the case of the Pharmaceutical Society v. the London and Provincial Supply Association (Limited), Lord Selborne said, when the action was finally disposed of in the House of Lords, "He who sells, whether he be master or servant, whether he be the principal or the person delegated to conduct and manage the sales, is struck at by section 15." This dictum has been endorsed by every judge who has had to interpret the section since. Nor, in the face of Mr. Justice Hawkins's judgment in the case of the Pharmaceutical Society v. Wheeldon, can it be held for a moment that with the doctor in one room and the unqualified dispenser in another, there exists the personal supervision requisite to relieve the assistant from liability. "By such personal supervision," said the learned judge, "we mean not merely presence in the shop or room where the sale takes place, but actual personal supervision, so that every individual sale shall be so guarded by the precautions prescribed by the Act that the safety of every individual member of the public may be provided for, so far as the law can accomplish that object."

Founded on this judgment, a number of unqualified

assistants to doctors in Scotland have been sued and fined for selling poisons, but no attempt has been made to apply the penal sections of the Pharmacy Act to the equally serious mischief which prevails here. The only distinction which, so far as we can see, can possibly be raised is that the Scotch doctors whose assistants have been fined keep rather more open shops. Legally, however, that is beside the question. The offence alleged is that of "selling," and, as we have shown above, that could be, without a doubt, established against the English unqualified assistant. The danger to the public is obvious, and unquestionably it is the danger which the Pharmacy Act was designed to prevent. The danger is there, of course, all the same whether the unqualified man is required to compound poisons or not. He is among them, and there is no check whatever on him. If he pours from the laudanum bottle by mistake, how will it ever be known? This risk is thought so serious in every European country that the laws against the same person prescribing and dispensing are most stringent. We have no prospect of obtaining any such law here at present, but much can be done in the way of limiting this wholesale recklessness by means of the Pharmacy Act, and there ought to be no hesitation on the part of those to whom its administration is entrusted to do their very utmost.

THE "TIMES" ON THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association opened its sixty-seventh annual meeting at Montreal on Tuesday last, when the new President, Dr. T. G. Roddick, M.P., of Montreal, delivered the opening address. The *Times* of Wednesday last takes the opportunity afforded by the publication of an abstract of Dr. Roddick's address to criticise the Association in a style which leaves little to be desired in the way of severity. "Dr. Roddick," says the leading journal, "fell into a not unnatural mistake when he dilated upon the power and influence of the Association over which he has been called upon to preside; the truth being that the absence of such power and influence is one of the most remarkable characteristics of the organisation." After explaining the constitution of the Association, which at present consists of 12,952 medical practitioners, and has accumulated some 40,000*l.*, mainly from advertisements inserted in the *British Medical Journal*, the *Times* asserts that—

"In spite of great and obvious advantages, of a membership of nearly thirteen thousand, scattered over all England and reaching into India and the colonies, in spite of a highly-remunerative weekly journal, which finds its way to medical men all over the world, and in spite of the possession of ample funds, it would be impossible to point to anything which the Association has done, either for the benefit of the medical profession or for that of mankind, at all adequate to the apparent possibilities of the case. Probably no statesman was ever influenced by its views with regard to any matter of legislation, whether purely medical or relating to some one of the many social questions upon which medicine is calculated to throw light. The Association has made some microscopic pecuniary grants for the promotion of scientific research; and nothing very important has ever come of them. Papers on professional subjects are read at its annual meetings, both at the branch meetings and at that of the entire body; but the attendance is usually limited and the discussion perfunctory, the members generally preferring to devote their time to recreative purposes. The scientific work of the profession, the charitable work of the profession, and the defence of the pecuniary interests of practitioners are all mainly accomplished by independent societies which have been called into existence for these purposes."

What makes it worse is that the writer goes on to suggest that the impotence of this most self-respecting body may be due to "the existence of a Council which largely consists of

irremovable life members, and which is said to disregard the resolutions and recommendations of branches as completely as if they had never been brought under its notice." We have no brief to speak for the irremovable old gentlemen, but it is due to them to say that it is their inertia which keeps the Association alive. If they were to set themselves to carry out the crazy schemes of legislation which perennially blossom from their branches, the British Medical Association would burn itself out in a few months.

CLUB-PRACTICE IN HIGH PLACES.

The students of the Aberystwith University College are peculiarly favoured, as may be judged from the following paragraph which we cut from the College prospectus:—

A voluntary medical fee of 2*s.* 6*d.* for men students and women students residing with their parents or guardians entitles to free medical attendance during the College session.

If the College had a complete medical curriculum we could understand the low fee, for material must be found for young sawbones, and what more altruistic than the provision of the above paragraph? But the College is not yet a full-blown medical school, and the half-crowns of all the students put together would not keep a healthy doctor for a month. Who pays for the medical attendance?

CONCERNING NUTMEGS.

Dr. O. Warburg, a botanist connected with Berlin University, and a teacher at the School for Oriental Studies in that city, has just published a monograph of over 600 pages on the history, botany, and uses of the nutmeg and on the commerce in the article. Dr. Warburg was well qualified for his task, for he has travelled a good deal in the Eastern Archipelago, and it was he who, on a botanical expedition to New Guinea, discovered the parent-plant of the "long" or Papuan nutmeg. The first unmistakable references to the nutmeg occur in the works of the Arab physicians of the ninth and tenth centuries, but in the thirteenth and fourteenth centuries nutmegs and mace gradually became known in Europe as aromatics. Up to the end of the last century the Dutch-Indian Banda islands were the only source of production of the spice. In 1772 an effort was made to establish the culture in the Mauritius, and afterwards plants were taken to Cayenne, the Antilles, Madagascar, Zanzibar, &c. But none of these efforts at propagation succeeded, for the simple reason that the would-be propagators forgot that it was necessary to take over both male and female plants. At the present time the world produces yearly about 2,000 tons of nutmegs and 50 tons of mace. Of this quantity the island of Banda produces 37.4 per cent.; Sumatra, 19.6 per cent.; the other Dutch Indies, 24.3 per cent.; the West Indies, 6.2 per cent.; and Malacca, 12.5 per cent. It is calculated that a plantation of 1½ kilometre square would supply the requirements of the whole world. At the present time the use of nutmeg and mace in pharmacy has almost died out, and the employment of the spice for culinary purposes is also declining rather than increasing.

Tabs.

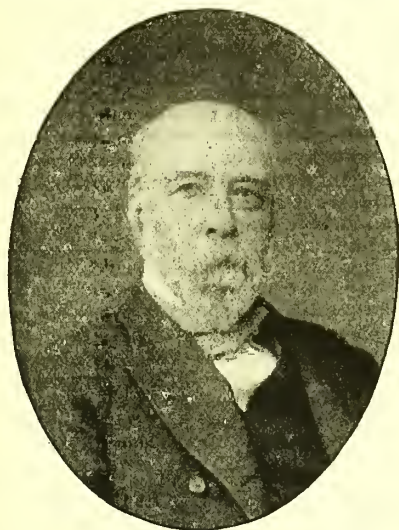
CHICAGO COLLEGE OF PHARMACY GRADUATES write themselves down ALC₂P—Alumnus of the Chicago College of Pharmacy.

CAMPHOR-IMPORTS INTO THE U.S.A. have, says the Botanist of the U.S. Agriculture Department, fallen from 2,857,222 lbs. in 1887 to 323,457 lbs. in 1896, while the price per pound during the same period increased from 12*c.* to 34*c.*

SPOTS ON TOBACCO are due to a species of fungus which attacks the growing leaves. A special kind of Sumatra tobacco which is highly speckled has increased so much in value that the United States tobacco growers imitate it by sprinkling leaves with chemicals.

Commissioner Kerr Advises.

WE often have occasion to report the shrewd remarks made by the Judge of the City of London Court in cases concerning our trade. If the officials of that Court would only provide a few reserved seats there would be few



ROBERT MALCOLM KERR, LL.D.,
Judge of the City of London Court.

better entertainments provided in London than a visit there when the Commissioner is sitting. A few specimens of his comments, gathered from cases heard during the past few days, may be given as illustrations:—

SENDING CHEQUES BY POST.

On Saturday last an advertisement agent sued an advertiser for 19s. 6d. The defendant said he had sent a cheque for the money. He had sent this without any request from the plaintiff. The plaintiff said he never received the cheque. Mr. Commissioner Kerr told the defendant that when a member of the public chose to send a cheque by post he did so at his own risk. If it got lost or stolen he must put up with the consequences. The plaintiff had never been aided. The defendant must pay the money again.

DOCTORS AS WITNESSES OR ASSESSORS.

On the same day the Commissioner had a case before him in which a working man claimed damages for personal injuries. Dr. Hillyard, of Bromley, was called to testify to the poor man's injuries, which were extensive and serious. While the doctor was being cross-examined by the counsel for the defendants Mr. Commissioner Kerr said he was always sorry to see a medical practitioner treated as a partisan. In his view the doctor ought to sit with the Judge on the bench and advise the Court as to the injuries of the plaintiff.

A COMPLIMENT FOR KING SOLOMON.

In a third case counsel applied for an order for the postponement of a particular trial. Mr. Commissioner Kerr intimated that no notice of the intended application had been given to the Court. The counsel remarked that an affidavit had been filed in the court. "Yes," answered his Honour, "you may file fifty affidavits, but they do not constitute one notice to the Court. I wish the solicitors who practise here would either condescend to go elsewhere, or else learn their business. King Solomon, you know, sat at the gate of Jerusalem, and no doubt he administered justice admirably. I dispensed with all sorts of formalities; but I cannot. I have no doubt it would be far better for the people of this country if justice were administered to-day as King Solomon dispensed it. But, under existing circumstances and conditions, I fear that that is impossible." The counsel suggested that legal procedure would be much more expeditious if the

learned Judge's idea could be carried out. "There would be a tremendous saving of costs," replied the Commissioner.

WRITING IS RISKY.

On Monday, a case was heard in which a claim was made for 48l. 18s. for money lent to assist in a business enterprise. The defendant had made himself responsible for the sum claimed, but his defence was that he and the borrower were partners. It was true that no interest was demanded, which gave colour to the defendant's suggestion; but the Commissioner asked to see the correspondence which had passed between the parties. This was fatal to the defendant, who had actually promised to pay the amount claimed. His Honour told the defendant that if he thought he had anything of a case (in his, the Judge's, view there was none) he might have it heard before a jury, which was the tribunal of which most Englishmen were exceedingly proud. He also pointed out to the defendant that while, usually speaking, the writing of letters and the reduction of everything to writing was a practice to be commended, at the same time if men would indulge in it they must take the consequences. As the correspondence was against the defendant he would have to pay the money.

COSTS IN THE HIGH COURT.

The subject of High Court *versus* County Court costs is one on which the learned President speaks out frequently. He protested once more on Monday against a man being sued in the High Court when he could have been sued in that Court, where not only was the process ever so much more expeditious, but more economical than "at the large building in the Strand." For every shilling which unfortunate defendants were charged in the County Court, declared his Honour, they had to pay pounds in the High Court. That, at any rate, the Judge said, was very often his experience. The particular defendant before him guessed that that was why he had been first taken to the High Court instead of being sued in the City. The Commissioner's only rejoinder was: "I do not know. I cannot help you. It is the law, I am sorry to say."

I AM NOT A PROPHET.

A debtor was summoned for non-compliance with an order of the Court to pay a sum of 17s. His wife came, and said he would pay 5s. per month. This was acceptable to the plaintiff "if the defendant would keep it up." The Commissioner's answer was: "How on earth can I tell whether he will act up to his word? I am not a prophet. Don't you know that? You have come here to talk nonsense, apparently." The plaintiff said he was willing to take the offer unconditionally. "You had better," growled his Honour.

CITY JURY PANELS.

On Tuesday, when a jury came to be empanelled it was found that a man who had been summoned was dead and buried. The Commissioner said he supposed that jurymen had better be excused. The circumstance, he added, served to show the lax way in which the jury lists for the City of London were prepared. He had spoken about the matter over and over again; but there seemed little or no ground for hoping for reform.

WHY PEOPLE DRESS WELL.

A divorced husband was summoned for nonpayment of permanent alimony ordered by the Divorce Court; and it was given in evidence that he was a well dressed man, who always wore a profusion of jewellery; and, being in a good position, could well afford to pay the 4l. 19s. due to his ex-wife. The learned president could not admit that dressing well was evidence of the defendant's means. "Have you not learned yet?" he asked the witness "that well dressed people, for the most part, are those who have not a shilling in their pockets? If they did not dress well they would not be able to get further credit." The creditor pointed out that the defendant earned money by selling prints and coals. The Judge replied that that amounted to nothing. The High Court had held, he said, that carrying on business was not necessarily evidence of means, because the business might be conducted at a loss, and very often was so. Creditors who

came there "thought" a great deal too much—"just as if most folks now-a-days know how to think!"

TRAVELLERS AND CREDIT.

The terms of credit which travellers are allowed to give is a subject which comes before the Court almost daily. A firm of City traders sued one of their customers on Tuesday for 17*l.* for goods supplied in the way of trade. The defendant said the traveller gave him twelve months credit. The traveller denied point blank that he had done anything of the sort. Addressing the jury, his Honour said, "If the parties had taken the trouble to use a little drop of ink, a pen, and a piece of paper all this trouble would have been avoided. It is a blessed thing for the lawyers that people will talk so much instead of making little memoranda." "It is the talking" he added with a merry twinkle, "that keeps the lawyers going. If there were no talking they would starve and die. And I don't think any of us would be the worse for it." Whereupon there was laughter.

CONDUCT MONEY.

In another case a defendant who was a surgical instrument maker in the West End was summoned, for not having paid 10*s.* And the plaintiff had subpoenaed the defendant to attend the Court, but the latter was not in attendance. The plaintiff's solicitor said he had given the debtor 1*s.* as conduct money. The Commissioner said that was not enough. The solicitor said the defendant could get to the Court by train with 1*s.* The Commissioner retorted that the defendant might take an omnibus or walk there if he liked; but, the law required that he should be paid as conduct money a sum which was equal to that paid to an ordinary witness. The fact that the man was a defendant on a debtor's summons was no reason why the law should be departed from. Evidence of the man's means was then offered. He was a traveller for his brother, it was stated, and his wife had a business. His Honour said he could not commit a man to Holloway because he had a brother whom he worked for, and a wife who worked for him, and perhaps kept him. Many women kept their husbands, he noticed to the shame of the husbands. There was no evidence of means, he held; and the plaintiff had to retire from the Court anything but pleased.

EVIDENCE OF MEANS.

There were several applications for committal before the Court on Wednesday. In one a plaintiff tried to enforce payment of 3*l.* 19*s.* owing. He mentioned, as evidence of means, that the defendant had been spending a fortnight at Hastings, where he had been enjoying himself. His Honour asked how he was to know that the defendant's employer had not sent him to the country for the benefit of his health? He made no order. Another debtor was summoned for non-payment of a wine-bill. The Commissioner said it would be much better if the debtor drank water. At the same time, he could not commit a man because he drank wine. Another plaintiff tried to enforce payment of an instalment of 10*l.* from a defendant in the Kennington Road. "The man," said the plaintiff, referring to the defendant, "enjoys himself every minute of his life. Quite recently he had a trotting-match down at Brighton." "Why not seize the trotter?" asked the Judge. "Ah!" exclaimed the plaintiff, "I would if I could; but I can't put my hand on it. I can't find it." The defendant had made a boast, he added, that he would never pay until witness had taken out a summons for every instalment as it became due. The defendant's lawyer had offered him the whole debt (30*l.*) less a five pound note. His Honour advised the plaintiff to have nothing to do with lawyers. But, if he did, in such a case as this, he should say, "Don't talk about money to me. Put it down." Then he would see if there was anything in the lawyer's offer. (Laughter.) He could not make any order, as there was nothing to show that the defendant had any means.

Trade Notes.

A SALE of 1,300 cases of logwood extract, damaged by water, is announced in our supplement this week.

THE Liverpool Lint Company have issued slips of corrected postal information to attach to their calendars, which they will send to any chemist who has one of these in use.

THE D. C. L. Malt Extract is to be extensively advertised and put before the public as a proprietary article by the Distillers' Company, Limited, of Edinburgh. Modern chemists should see that they are stocked with the article.

MESSRS. HERTZ & COLLINGWOOD send us a facsimile of an order received from the "Secretariat des Commandements" of the King of the Belgians for 50 bottles of their Laurent-Perrier "Sans Sucre" champagne, to be sent to Spa, which says the Secretary, "Sa Majesté a trouvé très bon."

THE EASTMAN PHOTOGRAPHIC MATERIALS COMPANY (LIMITED) announce their intention of discontinuing for the present the bright little *Kodak News*, which they have been issuing for the past two or three years. They will, for the future, make their announcements through the ordinary medium for trade announcements.

A JENNER INSTITUTE for glycerinated calf-lymph has been established at 73 Church Road, Battersea. The method used in German Government laboratories, with modifications as advocated by Dr. S. Monckton Copeman, is followed. After the lymph has been taken from the calf the animal is slaughtered and examined, and if found unhealthy the lymph from that calf is rejected.

ALMANACKS AND CALENDARS.—Messrs. Ford, Shapland & Co., the Great Turnstile printers, send us samples of their almanacks and calendars for 1898. The octavo almanack printed on pink paper and enclosed in blue covers is exceptionally good, being well illustrated, and the "matter" has more tone about it than one usually finds in these compilations. The small pocket and purse calendars with and without pages of reading-matter or notepaper are got up in pretty chromo covers. The spaces left for chemist's own advertisements are ample.

Marriages.

ANNAN—MUNRO.—At Mathers' Hotel, Dundee, on August 23, by the Rev. A. B. Connel, D.D., and the Rev. William Wright, Lochee, William Annan, chartered accountant, Edinburgh, to Maggie Letts, daughter of the late George Munro, chemist and druggist, Lochee.

HEAP—RICHARDSON.—On August 25, at Stoke Parish Church, by the Rev. W. A. Parker, Isaac Henry Heap, pharmaceutical chemist, to Eveline, widow of the late John Richardson, of Wall Cottage, Basford.

SANGER—THORPE.—On August 25, at St. Mary's Church, Oatlands Park, Henry Sanger, of the firm of John Sanger & Sons, to Leila Somers, daughter of the late Lieutenant-Colonel Thorpe, of Knighton Lodge, Walton-on-Thames.

STONE—PETERS.—On August 24, at Aliphington Parish Church, near Exeter, by the Rev. W. David (Exeter) and the Rev. E. J. G. Dupuis (Vicar), Mr. Ernest Frederick Stone, eldest son of the late Mr. Frederick Stone, and of the firm of Messrs. Stone & Son, chemists, of 166 Fore Street, Exeter, to Miss Alice Partridge Peters, youngest daughter of the late Mr. E. Peters, of The Laurels, Aliphington.

Deaths.

AULT.—The death is announced of Mr. John Ault, chemist, Usk (Mon.), from pneumonia following on erysipelas. He was 64 years of age.

HAYES.—On August 22, at Great Warley, Essex, Mr. Jas. Hayes, chemist and druggist, Warley Common, near Brentwood. Aged 66. Mr. Hayes had resided at Warley for fifty-five years. He was for over thirty years a member and conductor of Brentwood Roman Catholic Church choir.

MARKS.—On August 21, at his residence 61 Priory Road, London, N.W., Mr. Henry Marks, in his 82nd year. Mr. Marks was for many years at the head of the well-known sponge business in Houndsditch, London, now directed by his sons and carried on under the style of Henry Marks & Sons (Limited). The deceased gentleman retired from active participation in the affairs of the firm about ten years ago, but up to the last he remained in touch with many of his old business friends.

STILING.—On August 25, at 4 Courtenay Street, Newton Abbot, Arthur Cecil, the dearly-beloved child of Mr. J. E. Stiling, chemist. Aged 4 years.

Personalities.

MR. C. S. GARNEYS, dispenser to Mr. T. H. Waller, surgeon, Chelmsford, rescued a child from drowning in the Recreation Ground last week.

DR. T. D. REED, Dean of Montreal College of Pharmacy, has been appointed to the Commission of the Peace for the district of Montreal.

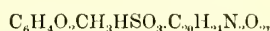
WE regret to hear that Mr. Ernest B. Layman (Wright, Layman & Umney, Southwark) has contracted typhoid while on his journey, and is lying seriously ill at Southport (Lancs).

MR. M. N. KLINE, of Philadelphia, has been in London this week. He was making inquiries about the P.A.T.A., which he seemed to think has touched the spot that the American drug-trade has been trying to get at.

New Remedies.

Dextroform is a compound of formaldehyde with dextrin, which has been recommended by Dr. Bongartz as an antiseptic in gonorrhoea, in which it has done good service. It dissolves in water and glycerine.

Guaiacuin (quinine guaiacol-bisulphonate) is prepared by the interaction of guaiacol-sulphonate and quinine in molecular proportions. Its formula is—



and it occurs as a yellowish, acid, bitter solid which is readily soluble in water, alcohol, or dilute acids. It is a substitute for guaiacol.

Holocaine.—Mr. Brudenell Carter, writing to the *Lancet* (page 1466), gives the result of his experience with holocaine, the new alkaloidal local anæsthetic, which, after some difficulty, he obtained from Mr. Rogers, Oxford Street, W., and used in 1-per-cent. solution for a cataract-extraction with iridectomy. He reports that the patient was unconscious of the first incision, and was barely conscious of the iridectomy, not flinching or moving the eye on account of it. The section healed perfectly by the first intention. A day or two later he used the same solution before slitting up the choroidal canalculus, and rendered the little operation absolutely painless. He thinks that the new agent will be found highly useful in ophthalmic practice. The promptitude of its action is alone of no inconsiderable advantage.

Ichthalbin, or ichthyolalbumen, is a new preparation of ichthyol made by mixing solutions of ichthyol and white of egg, collecting the precipitate, washing with alcohol or ether, and drying. It occurs as a fine, greyish-brown powder, which is not only odourless but tasteless. Four parts of ichthalbin are equal to 3 parts of ichthyol.

Drug Verses.

APPENDED are more of the best verses received in our last postcard competition, which called for a four-lined description of some drug or chemical product:—

Manna.

Fraxinus Ornus from Sicily came;
'Tis sweet by nature and by name—
'Tis gummy, sticky, clarty stuff,
Put in B.P. to fill it up.

H. LEGGOTT, Hull.

Oil. Morrhue.

'Tis the oil of the cod, and I've heard them complain,
Though you swallow it bravely it rises again,
With its bland fishy taste, and its slight fishy smell;
So with extract of malt we emulsify well.

XXX.

Pil. Ferri.

Pilulæ ferri—pills of Blaud—medicos thy name do laud,
Colonred pink (not white nor black), boomed ye are by—well!—
a quack!

Women young, with wan chlorosis, take thee—some fifteen a day
Oh! keep thy "sun for ever shining" while thy profits make our
hay.
JOSEPH N. CHOAT, Heme Hill.

Quercus Cortex.

Thou noble oak! an ordained destiny thine,
Long sought to waft ambition o'er the brine;
And should the seasonable plum rebel,
Then take decoctum quercus, and—be well!
DAVID JACOBS, Middlesborough.

Rhubarb.

O Rhubarb! what virtues are hid in thy root!
Casarea may sneer, and Jalap may hoot:
Synthetics and remedies new by the score
Bow down in obeisance with praises galore.
F. W. VASEY, Reading.

Scoparii Cacumina.

Quoth the student, as raising his eyes from the book,
"Though humble its place in our story,
Here at least is a plant which, if timely we look,
Can still rival great Solomon's glory."
C., Dundee.

Starch.

The B.P. starches—wheat, rice, maize—
To recollect them often pays;
When mixed with boiling water you
May cool, and get with it a blue.
* Iodine.

J. VERNON MITCHELL, 33 Cavendish Buildings, W.

Tamarinds.

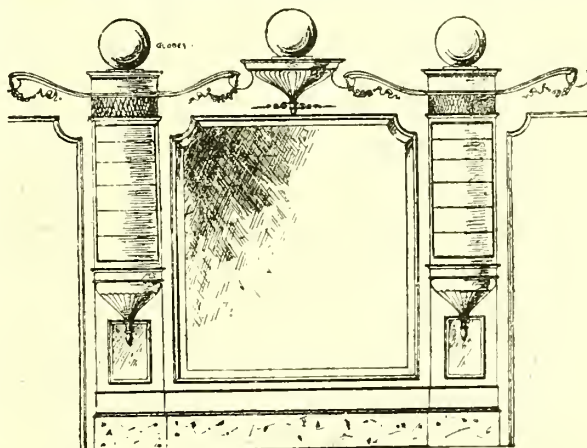
There's tamarindus indica, the pulp (preserved) of fruit,
'Tis used in making sennæ conf., and nothing else will suit;
A piece of bright iron left one hour in contact with the pulp
If no deposit it does show, you may the product "gulp."
A. FELTHOUSE, Queen's Park, W.

Vaseline.

Unctuous vaseline, oozily greasy,
Besmeared by the million o'er cuticles "teasy";
How gratefully comforted the cyclist must feel
That 'tis equally good for himself or his wheel!
A. HUNTER, Southend-on-Sea.

A Nobel Window-screen.

WE cut the subjoined illustration of a druggist's window-screen from an advertisement by the Union Showcase Company, Chicago. The globes on the top of the screen are



for showing coloured liquids. So placed the characteristic of a pharmacy is retained, without interfering with the use of the window for display purposes.

Hints on the Management of an Examination-paper.

By WILLIAM DODDS,

Author of "A Complete Guide to the Pharmaceutical Preliminary Examination," &c.

There is an art of answering to be studied; and many a failure is to be traced to ignorance of its rules.—DEAN COWIE.

A LONG experience in the training of pupils preparing for the Pharmaceutical Preliminary and similar examinations has convinced us that, after all the time and trouble expended by students in getting up their subjects, it often happens that a good many marks are thrown away by the neglect of a few practical rules, the observance of which would have enabled them to display their knowledge to much better advantage. A few hints on the management of an examination-paper may therefore prove useful to intending candidates. For the moment, we confine our consideration to the papers set for the first, or Preliminary, examination of the Pharmaceutical Society.

Before commencing to answer the questions the candidate should be sure to write his name very distinctly at the top of the first page of each of his answer-books, since for any book not distinctly bearing his name he is liable not to receive credit from the examiners. He should also be careful to distinctly number his answers.

Students who have not been accustomed to examinations by means of printed papers often fall into the serious error of trying to answer too many questions, and thus sacrifice the quality of their work to quantity. Unless, therefore, the candidate can readily deal with the whole paper, he should carefully select from it those questions which he feels he can answer most thoroughly. These should be worked out accurately and fully before the others are attempted. If any of the allotted time remains, he may take up the rest, always remembering that a few good answers will tell for more than the whole paper done badly. Let us append to this a hint on the danger of being too concise; not only show that you could say more, but if you have time, and it is really to some purpose, say it. As a general rule, the more elementary a question is the more fully should it be answered. If there is any peculiar difficulty or intricacy connected with the mathematical demonstrations, it should be brought out fully and clearly; and the examinee must be warned not to allow himself, under any circumstances, to be tempted to throw dust in the eyes of the examiner, by pretending that he has developed out of a fog of symbols a result he has not honestly arrived at. In other subjects, and especially in the language-papers, a great deal may turn upon a single letter, as, for instance, in the matter of case-endings. If the candidate be ignorant of the answer he will gain nothing by writing it indistinctly. Occasionally, we believe, a man fancies that by writing illegibly he will get the benefit of the doubt. But this is a mistake. Such a mode of proceeding will only expose the ignorance and untruthfulness of the person by whom it is practised, and recoil upon himself.

Before beginning to write an answer of any considerable length, such as an essay, jot down on a piece of paper the chief heads of what you intend to say. This should serve as a *track* for you to follow, but not necessarily as a *groove* within which you are to confine yourself. If while writing your answer you see good reason for departing from the lines laid down, of course you will feel at liberty to do so.

Let the papers be neatly worked, and the writing exhibit a good plain hand. At the best the examination of a great number of papers in a limited time is a very laborious and irksome task and the bad writer is sure to suffer in comparison with the good one. It is possible to write very quickly and yet to be quite legible, and the art should be resolutely practised beforehand.

Some students are constantly in the habit of looking out for what they call "catches" in the examination-paper, as if the examiner had cunningly devised pitfalls at every step for the unwary. The greatest care and circumspection are

required, of course, and are rightly demanded, as, for instance, when exceptions to general rules are given with regular forms in Latin. A question frequently occurs in the following form:—"Compare the adjectives *facilis*, *utilis*, &c." Now, as every student of Latin ought to know, six and only six, adjectives ending in *-ilis* form their superlative in *-ilimus*, of which *facilis* is one and *utilis* is not. But how often do we find pupils, for want of thought, write *utilissimus* for *utilissimus*? And yet such a question ought not to be called an unfair one or a "catch."

And this leads us to remark that candidates frequently misunderstand or altogether overlook questions for want of a little attention, and so apt are they to become nervous and worried that they scarcely know what they are about and make mistakes in the simplest things. How often have teachers found, for example, that their pupils have omitted to answer the second part of a question in their hurry to get through the paper? Therefore, endeavour to keep cool and collected; and again we say, read over your questions. The practice of leaving the examination-room before the expiration of the time allowed is in general most unwise. Cases of indisposition are, of course, exceptional. If as much of the paper as possible has been completed, it will always be good policy to review the work, or make fresh attempts at questions previously set aside. An opportunity is thus afforded also for discovering whether any part of a question has been omitted.

In working papers in arithmetic, we should advise candidates to show as much of the working as possible in the paper, so that if the result is incorrect the examiners may have an opportunity of ascertaining whether the error arises from ignorance of the rule or only a slip in the operation.

The candidate should also endeavour to arrange the matter contained in his answers after a clear, definite, and logical method, as a clear arrangement shows a thorough acquaintance with the subject, and produces a favorable impression on the examiner.

As this question of method and arrangement is of vital importance in working arithmetical examples, we will endeavour to give point to our remarks by a few illustrations taken from past papers set at the Pharmaceutical Preliminary examinations.

At the outset it should be borne in mind that examiners do not, as a rule, assign so much credit to results as to the methods by which they are reached, since this shows that the student not only knows how to arrive at certain results, but also has an intelligent apprehension of the principles on which the rules are based, as well as of the different processes by which they are obtained. He should, therefore, not rest contented with being able, even rapidly and accurately, to perform complex numerical calculations, according to some particular rule or formula, satisfied that the process which he has been taught to adopt in the solution of any problem is the true one—that the prescribed route must of necessity conduct him to the desired goal; but he should also, during and throughout his journey, everywhere find himself in a position to demonstrate that each particular step he is taking is accurately directed thither; so that, like a skilful mariner, after taking a true departure on the true course, he may, on pausing at any point in his voyage, perceive precisely where he is, how and why he arrived there, and whether he is still steering towards his destined port. It is for this reason that in most good schools the unitary method, in which we proceed from what is given to what is wanted by passing through a *unit* common to both, is rapidly displacing the unsatisfactory and misleading process called the Rule of Three, which merely teaches the young student to arrive at certain results, without a thorough knowledge of the method by which they are obtained; and as we know it is recommended by the examiners of the College of Preceptors, who set the papers for the Pharmaceutical Preliminary examinations, we always advise intending candidates to adopt it. It is a somewhat cumbersome method in examples of compound proportion, but is most useful in dealing with questions on profit and loss and stocks, as compelling the pupil to reason out each step of the process. We will give an example or two.

(1) "If $5\frac{1}{2}$ per cent. would be gained by selling 121 lbs. for 28l. 11s. 10 $\frac{1}{2}$ d., at how much per lb. must it be sold to gain 12 per cent.?" (July, 1894)

We reason thus:—

"If 23l. 11s. 10³/₄d be charged when the selling price (of 100) is 105¹/₂, what will be charged when the selling price is 112?"

At 105¹/₂ the charge is £26 11s. 10³/₄d.

" 1 " " 105¹/₂

" 112 " " $\frac{£26\ 11s.\ 10\frac{3}{4}d \times 112}{105\frac{1}{2}} = £28\ 4s.\ 8d.$

Selling price per lb. = £3 4s. 8d. ÷ 12l = 4s. 8d.—Ans.

It should here be noticed and remembered

(i.) That on the first line we write the data or terms given in the question, placing last that term which is of the same kind as the answer (here the "charge").

(ii.) The percentage of profit or loss is reckoned upon the outlay, and not on the amount for which the goods are sold.

(2) "Find the buying price of a 3 per cent. stock when the investment of 434l. 12s. 6d. produces an income of 14l. 5s." (July, 1895.)

Here the buying price of a 3 per cent. stock will be the amount which must be invested to bring in an income of 3l. Hence we reason thus:—

"If an investment of 434l. 12s. 6d. produces an income of 14l. 5s., what investment will produce an income of 3l.?"

Income of £14¹/₂ is derived from investment of £434¹/₂

" £1 " " " £431¹/₂

" £3 " " " $\frac{£431\frac{1}{2} \times 3}{14\frac{1}{2}} = £91\ 10s.$

The price of the stock is therefore 91¹/₂—Ans

As an example of faulty arrangement we take the following example from a student's note-book:—

"Add together 1³/₄, 2²/₃, and 3¹/₂; multiply this sum by the product of these fractions; subtract from the result the difference of 2²/₃ and 1¹/₂ and divide the remainder by the sum of 5¹/₂ and 1¹/₃ of 3³/₄." (October, 1885.)

$$\frac{7}{4} + \frac{8}{3} + \frac{7}{2} = \frac{21 + 32 + 42}{12} = \frac{95}{12};$$

$$\frac{7}{4} \times \frac{8}{3} \times \frac{7}{2} = \frac{49}{3} \times \frac{95}{12} = \frac{4655}{36} - \frac{7}{6} = \frac{4655 - 42}{36} = \frac{4613}{36}, \text{ \&c.}$$

It will be seen that he obtains the correct result in the end, but in order to save himself trouble he makes false statements on the way.

The product of 1³/₄, 2²/₃, and 3¹/₂ is $\frac{49}{3}$, and not $\frac{49}{3} \times \frac{95}{12}$; and again, this product is equal to $\frac{4655}{36}$, and not $\frac{4655}{36} - \frac{7}{6}$; otherwise 4655 would be equal to 4613.

Each different step should be given on a different line, thus:—

$$\text{Sum of fractions} = \frac{7}{4} + \frac{8}{3} + \frac{7}{2} = \frac{21 + 32 + 42}{12} = \frac{95}{12}$$

$$\text{Product of fractions} = \frac{7}{4} \times \frac{8}{3} \times \frac{7}{2} = \frac{49}{3}$$

$$\text{Sum} \times \text{product} = \frac{95}{12} \times \frac{49}{3} = \frac{4655}{36}$$

$$\text{Diff. of } 2\frac{2}{3} \text{ and } 1\frac{1}{2} = \frac{8}{3} - \frac{3}{2} = \frac{7}{6}$$

$$\text{Remainder} = \frac{4655}{36} - \frac{7}{6} = \frac{4655 - 42}{36} = \frac{4613}{36}$$

$$\text{Sum of } 5\frac{1}{2} \text{ and } 1\frac{1}{3} \text{ of } 3\frac{3}{4} = \frac{11}{2} + \frac{4}{3} \text{ of } \frac{15}{4} = \frac{11}{2} + 5 = \frac{21}{2}$$

$$\text{Quotient} = \frac{4613}{36} \div \frac{21}{2} = \frac{4613}{36} \times \frac{2}{21} = 12\frac{11}{34} \text{—Ans.}$$

The simplification of complex fractions frequently puzzles the learner, from want of attention to one or two simple

rules. They are fully given in any good text-book, but we may sum them up in a few words:—

(i) When brackets are not used, fractions connected by the word "of," and the signs \times and \div cannot be separated; they must be taken together and simplified as the first step. The results are then to be added or subtracted, as the case may be. But remember to add and subtract last of all.

Simplify—

$$\frac{\frac{1}{3} + \frac{2}{11} + \frac{7}{24} - \frac{1}{3} \text{ of } \frac{2}{11} \text{ of } \frac{7}{24}}{1 - \frac{1}{3} \text{ of } \frac{2}{11} - \frac{2}{11} \text{ of } \frac{7}{24} - \frac{7}{24} \text{ of } \frac{1}{3}} \quad (\text{April, 1834})$$

$$\frac{\frac{1}{3} + \frac{2}{11} + \frac{7}{24} - \frac{1}{333}}{1 - \frac{2}{33} - \frac{7}{132} - \frac{7}{72}}$$

$$264 + 144 + 231 - 14$$

$$= \frac{792}{792 - 48 - 42 - 17} = \frac{792}{792}$$

$$625$$

$$= \frac{792}{625}$$

$$792$$

$$= 1 \text{—Ans.}$$

Some teachers recommend their pupils to enclose within brackets all quantities connected by "of," \times , and \div , thus:—

$$\frac{\frac{1}{3} + \frac{2}{11} + \frac{7}{24} - (\frac{1}{3} \text{ of } \frac{2}{11} \text{ of } \frac{7}{24})}{1 - (\frac{1}{3} \text{ of } \frac{2}{11}) - (\frac{2}{11} \text{ of } \frac{7}{24}) - (\frac{7}{24} \text{ of } \frac{1}{3})}$$

The brackets denote that the quantities within them must be treated as simple quantities.

The antiquated method of multiplying a compound quantity by splitting the multiplier up into factors should be discarded, and the final product obtained in one line. For example, to multiply 4l. 16s. 7¹/₂d by 1267.

The process is so simple that no verbal explanation is necessary. At an examination the working should be placed in the margin.

$$\begin{array}{r} 1267 \\ 3 \end{array}$$

$$4)3801$$

$$950d. \text{ and } \frac{1}{4}d.$$

$$8869 \text{ the result of multiplying the top line by 7.}$$

$$12,9319$$

$$818s. \text{ and } 3d.$$

$$\begin{array}{r} 7602 \\ 1267 \end{array} \text{ the result of multiplying the top line by 16.}$$

$$20,41090$$

$$£1054 \text{ and } 10s.$$

$$5068 \text{ the result of multiplying the top line by 4.}$$

$$£3122 \text{ } 10s \text{ } 3\frac{1}{4}d \text{—Ans.}$$

Other instances might be adduced, but enough has been said to show the great importance of right method and arrangement in arithmetic, and to prove the proposition with which we set out—that a man may enter the examination-room with his head crammed full of knowledge, and yet fail to do himself justice. *Verb. sap.*

THIS is a specimen of the way in which some of our foreign competitors are touting for business by circular and letter among British houses in the colonies. It was addressed to a firm in Colombo by a house in Italy:—

Many years of continual work have put me in the condition to assure that my instruments, skilfully made, have been declared insuperable. Accurate in the choice of the wood and of the celebrated workmen. I pay no attention to the profit, being glad of a little provision. I hope to be honoured with your respectable commissions, that will be executed with the greatest punctuality. I am, Sir, your,—FRANCESCO PUGLI FUGIETTEPPE.

REMARKS.—The prices are without deduction. The expenses of packing and expedition are at charge of the commissioner. The commercial houses that are not very well known are begged for the first affairs, to send the amount with the commission. For the expeditions against assignment, it is necessary to send a third part of the amount as anticipation, and the expenses of voyage with return.

Apparatus.

A SELF-MEASURING TABLET-COMPRESSOR.

Mr. B. E. Nelson, of Binghampton State Hospital, has communicated to *Merck's Report* particulars of a modification of the simple tablet-compressor which is so familiar, the object of the modification being to dispense with weighing the powder for each tablet. The compressor (shown in fig. 1)

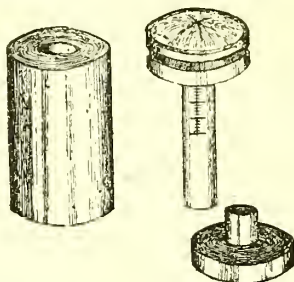


FIG. 1.—Steel Cylinder, and Upper and Lower Dies.

consists of a metal cylinder turned from a section of steel shafting 1 inch (25 millimetres) in diameter, and 2 inches (50 millimetres) long, with an upper and lower die also turned from the same material. The upper die is graduated into millimetre divisions, and is of the same length as the cylinder, the bore of which it accurately fits; the lower die is much shorter. If a lentil-shaped tablet is desired, the faces of the dies must be slightly hollowed out. The top of the upper die comes to an obtuse point, so that

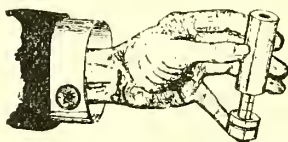


FIG. 2.—Method of Holding Compressor while Filling. It is often more convenient to use the last two fingers for regulating the position of the die.

blows received upon it fall directly on the central line thus preventing it being bent. Mr. Nelson uses three dies, with central bores of 12, 9, and 6 millimetres (about $\frac{1}{2}$, $\frac{3}{8}$, and $\frac{1}{4}$ inch) respectively, to make any size of tablet desired. In using the compressor, the powder, with or without the previous addition of a small amount of acacia, previously prepared by dampening very slightly with an atomiser spray, is passed through a moderately fine sieve to make it of a uniform degree of fineness. The amount needed for one tablet is then weighed out and introduced into the cylinder,

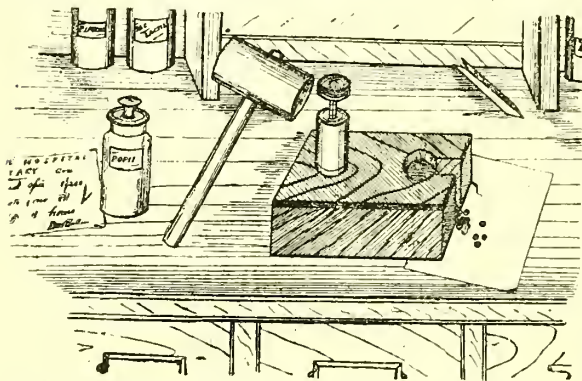


FIG. 3.—Accessory Apparatus: Compressing-block, Mallet, Tin Filler, &c.

which, with the upper die, is held as shown in fig. 2. The die is now moved up until the powder is level with the top; the number of divisions occupied by the powder read off on the piston, which is then allowed to drop back, and

the lower die introduced from above. The compressor is then placed in one of the holes made for the purpose in a block of wood, and struck a sharp blow with a mallet. The cylinder is then lifted from the lower die, and placed over the second hole (which is open beneath), and a gentle tap suffices to knock the tablet out on a paper or tray placed in position to receive it. In preparing the succeeding tablets it is only necessary to introduce a quantity of the powder, push up the die to the former mark on the piston, and remove the excess of powder by drawing the edge of a spatula across the top of the cylinder. In fig. 3 is shown the wooden block above mentioned. It may be made ornamental, but it should have a cushion of rubber (such as is used by plumbers for packing joints) glued to its bottom, to deaden the sound and prevent jarring while in use. The wooden mallet for striking the die, and the small oblong piece of tin, bent into the form of a gutter, which serves better than a spatula for introducing the prepared powder into the compressor, are also shown. With this apparatus one may compress from six to ten tablets per minute, according to the nature of the powder.

Chemistry, Mainly Pharmaceutical.

It passes man's comprehension to fix upon the smallest quantity of an element which he would put into a molecule.

This thought is suggested by some figures respecting the detection of metals (*Chem. Zeit.*). The most easily detectable metal is lead: one part of it in 196,000,000 parts can be detected by means of sulphuretted hydrogen. Gold comes next, 1 in 100,000,000, hydrochloric acid and chloride of tin being the reagents; then we may put copper, 1 in 15,660,000 as sulphide; iron, 1 in 15,000,000 with logwood; arsenic, 1 in 3,600,000 as sulphide; zinc, 1 in 3,000,000 as ferrocyanide; and antimony, 1 in 1,500,000 by electrolysis. These are by no means the limits of detectability of the elements, as smaller amounts may be observed spectroscopically; even although not more were in this way detectable, it follows that as the element has to be distributed in the electric or other flame as gas, each incandescent particle represents a mere fraction of the amount of salt taken. The human mind cannot comprehend such a particle, yet it exists. The two-hundred-millionth of a grain almost of lead can be detected, which means that the atom cannot weigh more than that; there must, indeed, be many atoms of the metal in the solution. But taking it at that, the atom of hydrogen cannot weigh more than $\frac{1}{20,000,000}$ of a grain, which is incomprehensible, although it is based upon a thing which can be seen—and "knowledge of things we see."

The existence of a specific alkaloid in several species of plants of the same genus is well known, but there are not many active principles so widely distributed as Cytisine.

Cytisine, $C_{10}H_{17}N_3O$, the active principle of laburnum. Plugge and Ranwerda have identified it by Moer's reagent in thirty-eight species of *Cytisus*, ten of *Genista*, four of *Ulex*, ten of *Baptisia*, and one of *Euchresta*. The seeds were in all cases used. The following species of *Cytisus* were found to be free from cytisine—viz., *C. purpureus*, *racemosus*, *sessiliflorus*, *glabratus*, and *hirsutus*. Upon these results they think it possible to discriminate whether plants are really true species or varieties of species. Thus, amongst the thirty-eight *Cytisus* there must be many varieties, and of the four *Ulex* two are varieties of *Ulex europæa*. The authors state that *Cytisus laburnum* is not the richest plant so far as cytisine is concerned. They obtained 2.5 per cent. from the seeds of *Genista monosperma*, and as much from *Baptisia tinctoria* as from *laburnum* (1.56 per cent.). In the original paper (*Nederl. Tijdschr. v. Phar.*) they discuss fully the relation of cytisine to the papilionaceous family, and show how widely it is distributed independent of locality and climate.

THE *Medical Brief* says the microscope is an excellent toy for young medical men, but it never has been and never will be of great practical use.

The Supply of Formosa Camphor.

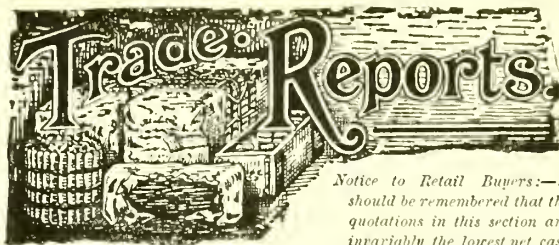
THE REV. DUNCAN FERGUSON, of the Presbyterian Mission, recently arrived in this country from Formosa, where he has spent seven and a half years in mission-work. The rev. gentleman, who has visited all parts of the island, and is thoroughly familiar with its products, has sent us the following notes on the present position and prospects of the camphor-industry. Mr. Ferguson writes:—

"In Formosa there are four treaty ports—viz., Kelung and Tamsui in the north, and Tainanfoo and Takow in the south. Under Chinese rule there was usually no difficulty in carrying the camphor from the hills where it grows to the coast, and thence by raft to Tainanfoo or Tamsui. It was only necessary to fell the trees, chop the wood, and distil it. All this work was done in districts inhabited by savages; hence the workmen had to be armed, and usually a few men were told off to guard. In spite of these precautions many scores of Chinese have been massacred whilst engaged in this work. Since the Japanese occupation of the island the difficulties in carrying on the trade have been greatly increased. Practically the whole island, but especially the camphor-districts, rose in rebellion against the Japanese, and the trade was completely stopped. There were large quantities of camphor in the storehouses at the foot of the mountains, but the work of transit became so dangerous that coolies would not carry it out to the coast. A camphor-merchant who visited Chip-Chip (a camphor-district in Mid-Formosa) last September wrote in the *China Mail* that the whole region was in turmoil; that *compradores* of foreign hongs were ordered away; and that they would be notified when business could be resumed. During the last two months, however, a small steamer has been able to take one or two cargoes of camphor down to Tainanfoo from Mid-Formosa.

"If the past policy of the Japanese forms any criterion for their future action, it is easy to see that their annexation of Formosa will considerably affect the camphor-trade. It is an open secret that the Japanese want Formosa for themselves, and all its trade into their own hands. They no sooner entered the camphor-districts than they forbade the natives to cut down the trees. In May, 1896, I visited the camphor-districts. One day, on approaching a camphor-store or distillery, the natives, who had been preparing the camphor-chips, fled, thinking me a Japanese. Afterwards they explained that the Japanese police had forbidden them all to engage in the trade under penalty of death.

"At that time the Japanese native press made no secret of their intention to oust the foreign merchant. They will try to do it in one way or another. There are many Japanese merchants with capital ready to take over the camphor-trade at once, but I think that the Government will make a monopoly of it. At any rate we may depend upon this—that the Japanese will not allow this remunerative trade to go on without interference. If the foreign merchants are not protected by their respective Governments, the Japanese will certainly send them about their business. In any case, if the Japanese do not (as I expect they will) make a Government monopoly of the camphor-trade, or levy an extra heavy export-duty (of which I heard nothing when I left Formosa in January) on the drug, the export-price of the gum ought to be lower than formerly, because Japanese are content with a much smaller profit than European merchants.

"Situated as the Formosan forests are in savage territory, it is well-nigh impossible to state their extent. I have often conversed with natives who have hunted deer all over the wooded hills. They say that the supply of camphor is almost unlimited. Immense forests abounding with it have never yet been touched. Some of the trees are of enormous size. I have seen a cross section of a camphor-tree 8 to 9 feet in diameter. Hitherto the work has been carried on with great waste. Trees have been recklessly felled, and the wood used by the natives for all sorts of purposes. Young trees have never been planted in the denuded forests. The primitive process of distillation used by the natives is also very wasteful. For the next fifteen or twenty years at any rate there is little likelihood of the camphor-supply approaching exhaustion."



Notice to Retail Buyers:—It should be remembered that the quotations in this section are invariably the lowest net cash prices actually paid for large quantities in bulk. In many cases allowances have to be added before ordinary prices can be ascertained. Frequently goods must be picked and sorted to suit the demands of the retail trade, causing much labour and the accumulation of rejections, not all of which are suitable even for manufacturing purposes. Further points which should be borne in mind are that the distributor generally has to bear the bulk of the freight-charges on the goods on their way from the producer to the retailer, and that for many articles the range of quality is very wide.

42 CANNON STREET, E.C., September 2.

THE volume of business this week has been smaller than last, but the position of trade generally seems to be firming up. At to-day's auctions the offerings were comparatively light, the whole of the business being finished before 3 P.M. The demand was on the whole slow, cardamoms being perhaps, the principal exception to this, an advance of fully 2d. taking place. Vanilla also dearer, the advance being mainly on the ordinary qualities. Para tonca-beans sold very cheaply. Jamaica wax is lower, whilst Tinnevely senna of the lower grades sold at an advance. Rhubarb was again neglected. Guarana is tending easier. A few lots of Turkey galls, mainly sea-damaged, were sold cheaply. Orris-root neglected at auction. Curaçao aloes sold well. Ipecacuanha firmly held, but demand slack. Musk seems to be tending easier. Cattle-fish in fair demand for bold. Nux vomica sold cheaply. Russian aniseed rather firmer. Cotton-seed lower. Calumba continues to realise high prices. Genuine Jamaica sarsaparilla has a rather easier tendency. Honey quiet. Persian liquorice-root slightly easier. Fine dragons-blood still scarce, ordinary qualities without demand. Jaborandi-leaves neglected, as is also myrrh. Castor oil very firm and tending still higher. Camphor and ergot quiet. In essential oils there has been a fair amount of business doing, but no alterations in prices. HIGH American peppermint oil is slightly lower on the spot. Star-anise oil and cassia are unchanged. Most kinds of Messina essences are firm. Eucalyptus oil was in large supply at to-day's auctions, but nothing was sold. There is no demand for nutmeg and cinnamon oil. In fine chemicals quinine is unchanged. Citric and tartaric are firmly held, while cream of tartar is slightly dearer from abroad. Howards' salicylate of bismuth has been reduced. Lactic acid is easier. Cinchonine sulphate has been reduced. Carbolic acid and glycerine also lower. Turpentine higher. Petroleum dull. Shellac firm.

A correspondent in Bulgaria writes under date of August 27:—"After a great deal of skilful manoeuvring and all sorts of moves and counter-moves by the exporters and growers, the comedy of fixing the new prices for this year's rose crop has been well performed, to the satisfaction of all interested in it. The prices of the new otto have been settled on the basis of those of last year—viz., 30 centimes (about 3d.) per degree Réaumur for pure otto, crop 1897. Thus pure otto, having a freezing-point of 16° R. (63° F.), is now sold and freely bought at the price of 4.80f. per muskal or about 26s. 8d. per T. oz., and pure otto—freezing at 15° R (65-75° F.)—at 4.50f. per muskal, or about 25s. per T. oz.

The Bulgarian Otto-of-rose-market.

There are already about twenty villages that have accepted this price and sold their otto. All the other villages are expected to follow suit. Should the demand from the West prove very brisk and large, naturally a corresponding rise may follow here; and, on the contrary, if the demand turns out to be limited, there is bound to be a slight decline in our market late in the season. The present indications favour the latter possibility, especially as the crop proves everywhere much larger than at first estimated. Immediately after the harvest many efforts were made on the part of certain sophisticators, speculators, and holders of old stock to minimise the new and old output, and force our market up in order to facilitate abroad the sale of their old and deteriorated stocks, but all these efforts fell flat. No one abroad was scared by their alarming reports of a very small crop, and few, if any, were induced to contract for otto before the new prices were actually fixed here. This year the practice of fixing the price of the otto of a village on the basis of its freezing-point has become general, and adopted and applied by all the exporters in every village of the rose district. This is another step forward in the right direction, as the practice has considerably diminished the sophistication among the present growers. The quality of the new otto is everywhere proving much more excellent than at first supposed, and if the consumers are this year more exacting and particular about the quality of the otto they buy and consume, they are sure to procure very fine otto."

Our Smyrna correspondent telegraphs on Thursday afternoon that the sales for the week amount to 25 cases for speculative account, and that in consequence the price has advanced 1d. per lb., new current *Talequale* being quoted at 7s. 3d.; selected at 7s. 5d. per lb., f.o.b.

Our New York correspondent telegraphs on Thursday afternoon that *Oil of wintergreen* is scarce and advancing, *New York* \$1.20c. per lb. being the current quotation. *Cablegram.* *Balsams* of all varieties are strong, prime *Tolu* being quoted at 44c. per lb., *Peru* at \$1.90c. *Truxillo*-leaves are in plentiful supply, at 14c. per lb. *Spermaceti* is in a strong position, at 32c. per lb. *Honey* advancing. *Roots* scarce and tending higher.

ACID (LACTIC).—One of the makers is trying to press sales, and has reduced his quotation to 2s. per lb. for 1-cwt. contracts, and it is stated that the other makers are prepared to meet this competition.

ACIDS.—*Citric* is quoted spot at 1s. 2d. per lb. for powder and crystals, *Howards'* make. *Tartaric* is in fair demand, without alteration in price, at 1s. 2d. per lb. for *English B.P.* quality, and at 1s. 1½d. to 1s. 1¼d. per lb. for *foreign* brands, on the spot. *Carbolic*: no demand, and easier at 6½d. for 35° C. and 7½d. for 39° to 40° C. *Crystals*.

ALOES.—Of *Cape*, 44 cases were offered, but the whole was taken out at 22s. per cwt. for fair hard bright, to 18s. for soft and drossy. Of *Curaçao*, 20 boxes good bright livery sold, subject to importers' approval, at 34s. to 35s. per cwt. *Socotrine*, 40 kegs and 39 cases, were offered, all of good quality, but the whole was withdrawn at 80s. per cwt. Last month 108 packages of all descriptions were landed, 408 delivered, with a stock of 5,706, against 6,437 same time last year.

ARABOBA.—Whilst the makers of chrysophanic acid are competing for orders the position of the crude article appears to be very strong, and advices from Brazil state that the article is arriving from the interior in very small lots—too small, indeed, to enable shippers to collect sufficient to send forward, and it is therefore unlikely that any will be received here for some time, especially as present prices are said not to pay for the continually growing cost of collecting. On the spot 3s. per lb. is asked for good quality.

ARSENIC.—The quotations of some of the large Cornish dealers somewhat vary in price. We hear of an order for 10 tons white powder being booked at 21l. 10s. per ton net cash, f.o.b. Plymouth, this being the remainder of a con-

tract. Another Cornish dealer quotes 22l. 2s. 6d. per ton net cash, c.i.f. Glasgow, for the above quantity; while Manchester agents are offering the same quality at 21l. 17s. 6d. net per ton, delivered c.i.f. Glasgow. The article is said to be tending higher in Cornwall. The London price remains at 23l. 10s. per ton.

ASAFETIDA.—A few cases have been sold this week at 65s. per cwt. privately. Really fine quality is now said to be getting scarce.

BALSAMS (MEDICINAL).—*Copaiba* dealer. Privately the asking price for good bright *Marankam* is 2s. 1d. to 2s. 2d. per lb. At auction 1 cask of this quality was bought in at 2s. 1½d. Twenty-six casks *Angostura copaiba* from *Venezuela* were sold at from 1s. 8d. to 1s. 8½d. per lb. *Peru* balsam was represented by 2 cases, which were bought in at 7s. 6d. per lb.

BENZOIN.—Of *Siam* benzoin 59 cases were offered, 32 selling at about last rates; good bright seedy block, part free, at 6l. 12s. 6d. per cwt., darker ditto 5l. 10s. per cwt., with hard block 90s. per cwt. Good blocky, small to bold almond, about half free, was bought in at 17l. Of *Sumatra* benzoin, 228 cases were offered, the bulk being bought in. Good fair seconds sold at 6l. 10s., and "without reserve," thirty-three cases sold at a reduction of about 10s. per cwt., at 60s. to 67s. 6d. per cwt. for low seconds. Arrivals last month were 745 packages, deliveries 379, and stock on August 31 3,524 cases, as against 2,724 same time last year.

BISMUTH.—*Howards' salicylate* has been reduced to 5s. 9d. per lb.; for assorted lots of not less than 56 lbs., 5s. 8d.; 112 lbs., 5s. 6½d. Physiologically pure is quoted at 9s. 9d.; 56 lbs., 9s. 8d., and 112 lbs., 9s. 6½d. per lb.

BUCHU LEAVES.—Very little was offering at auction. Three bales of round medium green leaves sold at 3¾d. per lb., and 4 bales of ordinary yellow at 2¾d. per lb., which marks a further slight advance.

CALUMBA is in fair demand. Seventy-eight bags were shown at auction to-day, 11 selling at 33s. per cwt. for good bright sorts. Twenty bags of fair pale were bought in at 32s. 6d., a bid of 29s. being refused. For another lot of 30 bags good washed 40s. was the limit, but 30s. was the highest bid obtainable.

CAMPHOR (REFINED).—*Japanese* is without change, 1s. 3d. per lb. being the current quotation. Twenty cases of thin squares from the Sumitomo Camphor Refinery, Kobe, Japan, were bought in at auction to-day at 1s. 4d. per lb.

CARDAMOMS.—The supply was again moderate, and with an active demand; the whole sold, on the average, at an advance of about 2d. per lb.: good bold pale *Ceylon-Mysore* realised 3s. 10d. per lb.; medium ditto, 3s. 4d. per lb.; small ditto, 3s. per lb.; medium splitting, 2s. 9d. to 2s. 11d. per lb.; brown splits, 2s. 7s. per lb. *Sced* sold well at 3s. 1d. per lb. for good, down to 2s. 9d. to 2s. 10d. for pale. The arrivals last month were 160 cases, deliveries 303, and stock 862 cases, as against 426 same time last year.

CASCARA SAGRADA is reported to be firmer on the spot, owing to dearer freights, due probably to the large shipments of wheat.

CASCARILLA.—Eleven bags of small, lean, and twiggy character were shown at to-day's auctions, and taken out at 30s. per cwt.

CINCHONINE.—*Howards'* sulphate has been raised to 4½d. per oz. in bulk; vials 5½d. for not less than 25 oz.

COCA-LEAVES.—At auction 20 bales of *Truxillo* and *Bolivian* were offered and bought in at 6d. per lb. The following figures relate to the Java export of coca-leaves for the last four years from July 1 to June 30:—

	1896-7	1895-6	1894-5	1893-4
Bales ...	1,067	1,105	1,121	362

CODEIA.—The makers, owing to competition, have reduced their prices for this to 11s. 3d. per oz. for 100-oz. lots, and 11s. 6d. per oz. for 16-oz. The move was entirely unexpected, as the season of the greatest demand is approaching.

COLOCYNTH.—There is very little business privately. The present value of good *Turkey* apple, with seeds, is from 1s. to 1s. 3d. per lb. At auction 5 cases fair *Turkey*, small to

medium, realised 1s. 2d. per lb. Another lot of 6 cases, brownish small apple, were bought in at 1s. 3d. per lb.

CREAM OF TARTAR is reported dearer from Bordeaux, sales of good *French* white having been made this week at 73s. 6d. per cwt., f.o.b. On the spot, 77s. 6d. is quoted for white crystals, and 79s. 6d. to 80s. for powder.

CROTON-SEED.—Seventeen bags were shown to-day at auction; 10 of these, poor and dark mixed, were bought in, there being no bid at 30s. Of another lot of 7 bags, 4 sold at 50s. per cwt., subject to approval, the remaining 3 being bought in nominally at 80s. per cwt.

CUBEBS.—About 130 bags in various lots were shown at auction to-day. Fair, slightly stalky were bought in at 28s. per cwt. Thirty bags of good to fair, but slightly mouldy, were limited at 22s. 6d., a bid of 19s. 6d. being rejected. Six bags of damages sold at 18s. per cwt.

CUTTLEFISH.—In fair demand. Four cases of small to fair pale quality realised 2½d. per lb. Five cases of small to bold realised from 2¼d. to 5¼d. per lb., according to quality. Sixty-three mats of medium bold white were bought in at 3½d. per lb.

DRAGON'S-BLOOD.—In all 31 cases were offered, but fine quality continues to be scarce. The whole of the above was bought in—dull seedy lump at 7l. (a bid of 6l. being refused); good reeds at 9l. The arrivals last month were 29 cases, and deliveries 9, with stock on August 31 of 104 cases, as against 134 same time last year.

ERGOT OF RYE.—For 24 bags *Russian* offered, at auction 6d. was the limit. Two cases very weevily *Spanish* were bought in at 6d., the highest bid being 3½d. per lb. For 6 cases fair sound bright, 10d. is nominally asked.

GALLS.—A quiet market; only a small business has been done in blue *Bussorah* galls at 50s. to 51s. 6d. per cwt. green are offering at 43s. to 48s., white 40s. to 42s. 6d., sorts 47s. to 48s. In *Smyrna* galls there is no business to report privately. Blue are quoted at 43s. to 44s., green 40s., white 35s. There is nothing offering to arrive.

GLYCERINE remains quiet, best *German* brands being quoted at 53s. per cwt., while *English* brands are offered at 48s. 6d. to 50s. per cwt. for tins and cases.

GUAIACUM.—Twenty-five packages (19 being small boxes of 15 lbs. each) only were offered—but the article is exceedingly dull, in view of the large quantity lately offered—and 10 boxes sold, 5 of fair glassy quality, partly drossy, at 1s. 3d. per lb., and 5 at 5d. per lb. for fair medium quality, this latter being very cheap.

IPECACUANHA.—*Brazilian* root, of which 50 bales was offered, is firmly held by importers, and as buyers had lower ideas only a few bales sold, at 6s. 1d. per lb. for very ordinary to 6s. 3d. for medium root. *Carthagenia* ipecacuanha was represented by 5 bags only, which were held for 4s. 10d. per lb. The arrivals last month were 102 bales, and delivery 44 bales, with a stock of all kinds of 292 bales, as against 454 same time last year, so that the position looks strong.

KINO.—At auction three cases of ordinary red gum were bought in at 5s. per lb., 4s. 6d. being the limit.

MENTHOL.—Unchanged, at 6s. 3d. per lb. on the spot. Very little business is reported this week.

MYRRH.—Nothing was sold at auction to-day. Six bales of fair, pale, small to bold *Aden* picked were bought in at 85s. per cwt. Ten packages of sittings were limited at 45s. per cwt. For another lot of 3 casks good pale *Aden* is limited at 5l. 5s. per cwt.

OIL (CASTOR).—Most varieties show an advancing tendency. Business has been done in *East Indian* firsts at 4l. per lb. on the spot. *French* oil is also dearer, 37s. 6d. per cwt. being the current quotation on the spot for medicinal quality. In consequence of the high price of castor oil, steamship companies, who have been in the habit of using it as an engine oil, are turning their attention to the heavy grades of petroleum oils specially prepared for this purpose. Fifty cases *Calcutta* firsts were offered at auction and held for 4½d. per lb., a bid of 4¼d. being rejected.

OIL (COD-LIVER) is reported to be firmer, though the range of quotations is wide. There is a fair amount of business doing, and we hear of one sale at 64s., c.i.f. terms,

although the refiner will not go on at this figure. The general quotations seem to be from 66s. to 70s., c.i.f. terms, for best non-congealing oil. Our *Bergen* correspondent writes on August 28 that the market is without change, holders maintaining the same quotations—viz., 64s. per barrel, f.o.b., price for best non-congealing *Lafoten*. The exports from *Bergen* to date amount to 5,935 barrels, against 3,171 barrels at the same period of last year.

OILS (ESSENTIAL).—There is a fair amount of business doing in essential oils this week, but there are no changes in price to report. *Cassia* is without alteration; business has been done at 5s. 1½d. per lb., c.i.f. terms, for 80 to 85 per cent. *Oil of cubebs* is offering at 4s. 3d. per lb., 8 cases of *Cinnamon oil* were bought in at auction at 5d. per lb. About 100 cases of *Eucalyptus* oil were offered to-day, but nothing was sold. For 17 cases, commercial quality, a bid of 10d. is to be submitted; 16 cases from the *Macedon Eucalyptus Oil Distillery Company*, *Macedon*, *Victoria*, were bought in at 2s. 1d. per lb. Other lots were bought in at 1s. per lb. for fair commercial quality. *Nutmeg oil*: Seventeen cases were offered, but nothing sold; from 2¼d. to 3½d. per oz. is asked. *Messina essences* keep very firm, and prices are not likely to go lower. *Lemon* is quoted at 3s. per lb.; *Sweet orange*, 4s. 9d.; *Bitter orange*, 6s.; *Bergamot*, 7s. 6d.; and *Mandarin* at 11s. per lb., f.o.b. *Messina*. The above quotations are for new crop, December-March, 1898, shipment. *H.G.H. American oil of peppermint* is offering at 6s. per lb. c.i.f.; and at 6s. 3d. on the spot, the latter being 1d. to 1½d. lower on the week. *Japanese* is quiet at 3s. per lb. for dementholised; 40-per-cent. oil at 4s. 3d. per lb., both c.i.f. terms. *Star-anise oil* remains unchanged at 7½d. per lb. *Oil of sandalwood*, *English* distilled, is quoted at 11s. 6d. to 12s. net per lb. according to quantity.

ORANGE-PEEL.—Twenty-four packages of good bright thin cut to dark *Maltese* were bought in at 5d. to 9d. per lb., according to quality. Several other lots were offered and bought in at nominal prices.

ORRIS-ROOT.—*Florentine* of the new crop is offering at 38s. per cwt., c.i.f. terms, for sorts: 39s. for small white; and 44s. per cwt. for extra picked or selected. New *Verona* is quoted at 28s. per cwt., c.i.f. terms, for sorts. At auction nothing was sold, 44 bags *Florentine* being bought in; good quality is limited at 46s. per cwt. Four bales *Verona* were offered without reserve, and taken out without mention of price. For 15 cases *East Indian* variety 15s. per cwt. is the limit.

OPIUM.—Privately little business has been done during the week. Good to fine *Soft-shipping* is quoted at 11s. to 12s. 6d.; seconds, 8s. 6d. to 10s.; good to fine *Smyrna*, 8s. 6d. to 9s. 3d.; seconds, *Druggists'*, 7s. 6d. to 8s. 3d.; *Constantinople*, ordinary to fine, 8s. 6d. to 9s. 3d. per lb. In *Persian* opium a few cases of good quality have been sold at from 9s. to 10s. 6d. per lb.

POTASH SALTS.—*Chlorate* dull at 3½d. to 4d. per lb., on the spot. *Carbonate*, 90 to 92 per cent., 16l. 10s. per ton, c.i.f. Hull. *Yellow prussiate*, 5½d. per lb. net. for Beckton. Other *English* makes, 5½d. to 6d. *Bichromate*, 4½d. per lb. *Cyanide* is quoted at 10½d. per lb. for 98 per cent. *Citrate* lower at 1s. 2l. per lb.

QUICKSILVER.—Slightly firmer, although prices remain unchanged at 6l. 17s. 6d. per bottle in first hands, and 6l. 16s. 6d. second hands.

QUININE.—9½d. per oz. still remains the nominal quotation, though we hear that business has been refused at this figure for a speculative order of 10,000 oz. Wholesale druggists' orders are being filled on the spot at 9¼d. per oz. At auction to-day 1,000 ozs. of *Tallandier's* brand, in 100-oz. tins, were offered at 9¼d. per oz. without finding a buyer. The arrivals last month were 2,686 lbs., with deliveries 4,082 lbs., and stock, on August 31, of 85,566 lbs., as against 99,098 lbs. same time last year.

RHUBARB.—Still in slow demand. Of 174 cases offered only about half-a-dozen found buyers at 1s. 2d. per lb. for good medium round *Canton* with grey and pinky fracture. The arrivals last month amounted to 371 cases, whilst only 80 cases were delivered. Stocks at the end of last month were 655 as against 395 same time last month.

SARSAPARILLA.—Twenty-five bales genuine grey *Jamaica*

were bought in at from 1s. 10d. to 2s. 2d. per lb. for first and second class country damaged to sound root. One bale of native *Jamaica* was bought in at 1s. 2d. per lb.

SCAMMONY has been very dull of sale, no business having been reported for a long time. Holders, however, do not show any sign of lowering their prices. The nominal quotations are: *Virgin* firsts, 27s. to 30s.; seconds, 18s. to 24s.; thirds, 10s. to 15s. per lb. "Skilippe," 5s. to 10s. 6d. per lb. *Scammony* roots tending higher, owing, it is said, to the periodical prohibition by the Turkish authorities of further gatherings. At the auctions there was no demand, 123 packages were offered and all bought in at nominal rates.

SEEDS (VARIOUS).—Twenty bags fair Russian *Anise* sold at 17s. per cwt., and for 30 bags of *Syrian* a bid of 14s. 6d. per cwt. is to be submitted. *Cumin-seed*: 33 bags were offered, and bought in at from 22s. 6d. to 32s. 6d. per cwt., according to quality. A parcel of fair East Indian *Annatto-seed* was bought in at 3½d. per lb., at which price it is said sales have been made privately.

SENEGA ROOT is reported firmer from New York, but quotations thence appear to be, so far, unchanged at 1s. per lb. c.i.f. terms, whilst on the spot 1s. 1d. per lb. is the nearest value.

SENNA.—*Tinnerelly* was in rather better supply, 220 bales altogether being catalogued, of which the bulk was of the new crop. No fine leaves were shown, the greater part being small brownish to green leaves, which sold at from 1½d. to 2d. per lb., mainly at 1½d., which on this quality represents a slight advance. For medium leaves the demand was not so active, and we should think these were about ¼d. per lb. lower, fair to good green selling at 2¼d. to 3½d. per lb. *Alexandrian* was in very full supply, totalling 142 bales, nearly the whole being bought in; but we understand that privately there is more inquiry, as it is thought that the whole of the new crop has now been sent forward.

SILVER NITRATE.—Our last week's quotations still hold good—viz., 1s. 4d. per oz. for *Crystals*, and ¼d. to ½d. per oz. more for *Sticks*.

SPICES.—*Cinnamon*: At the quarterly auctions a good demand prevailed, and the bulk of the offerings sold at ¾d. per lb. advance for ordinary qualities, and 2d. to 3d. higher for fine. *Nutmegs* dearer. *Cloves* steady. Large transactions are taking place in black and white *Pepper*.

STAR-ANISE.—Fifty cases of fair, but broken, *Chinese* were shown to-day, and bought in at 90s per cwt.

TONCA BEANS.—Privately there is very little business doing. At auction 20 cases of fair to good black *Para*, partly crystallised, sold very cheaply at 11d. per lb.

TRAGACANTH.—Business has not been quite so brisk this week, the sales still being confined to the lower qualities. Firsts, 13l. to 13l. 10s.; seconds, 11l. 5s. to 12l. 10s.; thirds, 10l. to 11l.; fourths, 8l. to 10l.; yellow and pinky, 6l. to 8l. per cwt.

VANILLA.—At auction, 153 packages were offered. Of these 120 sold, common foxy, 3½ to 8 inches, 11s. to 21s. 6d.; bad-keeping, 6½d. to 8½ inches, 23s. 6d. to 26s.; fair dull to good chocolate, 3½ to 8 inches, 21s. 6d. to 26s.; fine fresh chocolate, 6 to 8 inches, 26s. to 27s. 6d.

VARIOUS DRUGS.—Of *Syrian asphaltum* 75 cases were offered and withdrawn at 32s. 6d. per cwt. *Cactus-flowers*: Twelve bags, fair, were bought in at 8½d. to 1s. per lb., according to quality. Five bales *Chiretta* were bought in at 2d. per lb. Of *Cannabis indica*, 35 packages of partly dusty and broken tops, rather stalky, were bought in at 3½d. per lb. *Cassia fistula* without demand; 22 bags of good thin to bold long West Indian pods were retired at 5s. 3d. per cwt. Twenty-two bales *Cuscuta* are limited at 30s. per cwt. *Galangal-root* of fair, bold quality, "passed the hammer" at from 22s. to 25s. per cwt. Another lot of 85 bales was bought in at 26s. *Gum elemi*: Twenty cases of white, usual quality, were limited at 26s. *Guarana*: Fifteen cases ordinary held for 1s. 6d. per lb. *Jaborandi-leaves* neglected; 55 bales of dull, small, and partly dark mixed leaves elicited no bid. Of *Kamala*, 2 cases of fair quality were sold privately. Of *Patchouli-leaves*, 10 bales were shown, but of very poor quality; 8 bales realised 1d. per lb., "if pay charges," and two bales at ¼d.

per lb., for very damp, mouldy and stalky. *Parvira Brava* 3 bales of fair quality were bought in at 60s. per cwt. nominally. *Squills*, 6 bags of fair seconds were offered, a bid of 1½d. per lb. being rejected. Another lot of 13 bags was bought in at 3d. per lb. *St. Ignatius beans* are neglected, 15 bags of ordinary quality being bought in at 5d. per lb. *Bellium gum*: 5 bales retired at 10s. per cwt. *Chinese soy*, 50 casks of the usual quality, and bought in at 11d. per lb. *Tamarinds* were in fair supply at the auctions; 7 packages *West Indian* fair to good were retired at 8s. per cwt., as also were 47 casks of black *East Indian* at 9s. 6d. per cwt. One cask of *Cape argol*, fair, brown quality sold 47s., and 3 bags at 33s. per cwt.; 7 casks of *Greek tartar* were bought in at 67s. 6d. per cwt., nominally. For 3 cases of *Chinese vermilion*, 2s. was bid and refused, 2s. 3d. per lb. being the limit. Fifty cases *Japanese crude antimony* were bought in at 20l. 10s. per ton.

The Smyrna Opium Market.

Our Smyrna correspondent writes, under date of August 20 that the opium market remains practically unchanged: if anything, with a slightly lower tendency. The sales during the week include 2 cases current *Yerli talequale* at 7s. for speculation, 14 cases current *Adette talequale* at 6s. 10½d. (9 for exportation and 5 for speculative buyers), and 4 cases old *alequale* at 7s. 6d. per lb. for exportation. At the close the market was feeble. The season's arrivals of new opium up to date amount to 1,480 cases against 914 cases at the corresponding period of last year. Of 25 cases *new current talequale* sold last week 10 cases have been returned for examination by the inspector owing to inferior quality. The lowering of the rate of exchange has made sensible progress, and has aggravated the situation of opium, to the extent that 1 to 2 per cent. has been added to the price, thereby preventing the execution of several small commission orders on the market. The position is much changed, owing to interior speculators paying high prices on growing markets, and to the fact Smyrna capitalists are commencing to invest money on the drug. These latter do not care what they pay so long as they know that some day or other they 1s. or 2s. profit. All new crop hitherto arrived on our market costs our holders on an average the equivalent of fully 7s. per lb. f.o.b., therefore they will not sell unless with a profit. Some weak dealers give in and sell at 7s., 7s. 2d., or 7s. 3d., but the majority keep it in stock, and will not sell at present unless at much higher figures. This week's sales amount to about 60 cases, commencing at 7s. to 7s. 2d. as to quality, and ending at 7s. 2d. to 7s. 4d., or 2d. higher than last quotations. The Dutch Government buyers have also come in and bought fine selected *Karahissar*, well coated appearance and bright paste, to the extent of 20 cases, at 7s. 10d. per lb. f.o.b. Although our market will be maintained at present values, we do not expect any upward movement before October. If, however, by that time we do not get our usual early autumn rains, which are necessary for the sowings, there is no telling what steps our market may take; large speculators will naturally come forward, sellers will keep firm, and in a short time prices may be run up 1s. to 1s. 6d. over and above present figures.

Heavy Chemicals.

Changes in the heavy-chemical market have been unimportant, and not numerous, since the date of last writing. The general demand kept fairly steady, and is without much fluctuation. Prices all round are well maintained, makers restricting their output where necessary to effect this end. *Soda crystals* and *caustic soda* are very firm and active, whilst *Bleaching-powder* continues in very fair request, especially for home consumption. *Ammonia alkali* is firm at 3l. 17s. 6d. in bags, free on rails. *Sulphate of copper* is moving well, and moderate business is being done for next year's delivery. Present quotations, 15l. 5s.; Liverpool, 16l.; Anchor, 16l. 5s.; and January-April delivery, 16l. 15s. *Sulphate of alumina* of best quality meets with fair demand at 3l. 17s. 6d., free on rails, makers' works. *Crystal alum* steady: ground, 5l. 7s. 6d. to 5l. 10s.; lump, 4l. 12s. 6d. to 4l. 17s. 6d. *Alumino ferric* in request at 45s. f.o.r. *Saltcake* firm. *Chlorates of potash and soda* are rather quiet at 3½d. to 4d., and 4½d., respectively. *Yellow prussiate of potash* steady: Beekton, 5½d.; other makes, 5½d. Lancashire makers are well sold ahead, and in the majority of

cases hold out for 6*d.* *Brown acetate of lime* is rather dull, but prices are very firm, and have advanced. Present quotations for best American is 5*l.* 2*s.* 6*d.*, c.i.f.; Welsh, 4*l.* 17*s.* 6*d.* to 5*l.* *Carbolic acids* are dull and lower since last quotation: crude, 75 per cent., is 2*s.* 3*d.*; 60 per cent., 1*s.* 11*d.*; crystals, 39° to 40° C., 7½*d.*, and 34° to 35° C., 6¾*d.*; cresylic lower, 95 per cent., 1*s.* *Naphtha* is rather firmer. *Cresosote* moving briskly. *Sulphate of ammonia* is firmer and higher, with increasing business. Beckton terms, 7*l.* 12*s.* 6*d.*; London, Leith, and Hull, 7*l.* 15*s.* Demand for *Green copperas* is not quite so brisk; prices, however, are well maintained. *Recovered sulphur* in demand.

The Hamburg Market.

Our Hamburg correspondent, writing on August 31, says:—Business on our drug-market was quiet last week, but there has been a large business in spices at advancing prices. Agar-agar is firmer, holders asking 280*m.* to 285*m.* per 100 kilos. Aniseed firm, at 33*m.* per 100 kilos. Aloes unchanged, at 46 to 47*m.* per 100 kilos. Balsam Peru 15½*m.* per kilo. Borax quiet; refined quoted at 30½*m.* per 100 kilos. Cassia lignea firm, at 77*m.* to 78*m.* per 100 kilos. for new; fine old is quoted at much higher prices. Camphor (refined) steady, at 258*m.* to 260*m.* per 100 kilos. Cascara sagrada quoted to-day at 28*m.* per 100 kilos. Citric acid unchanged, at 253*m.* per 100 kilos. Honey is steady; Chilean, pile II. and III., at 45*m.* to 46*m.* per 100 kilos. Jalap (Vera Cruz) firm, at 102½*m.* per 100 kilos. Liquorice-root very firm, at 63*m.* per 100 kilos. Menthol unchanged, at 13½*m.* per kilo. Kola-nuts quiet, at 55*m.* to 60*m.* per 100 kilos. Nux vomica, 12½*m.* Opium quiet, at 18*m.* per kilo. Quinine unchanged, at 32*m.* per kilo. Quillaia bark very firm: whole bark 42*m.*, cut bark 46*m.* per 100 kilos. Calumba scarce, at 65*m.* per 100 kilos. Cod-liver oil is still quiet, at 68*m.* to 70*m.* per barrel for non-congealing oil. Russian anise oil firm, at 14½*m.* per kilo. Star-anise oil firm, at 16½*m.* per kilo. Peppermint oil, HGH, 6½*m.* per lb; Japan oil, 5½*m.* per kilo. Castor oil of first pressing is still scarce; prices vary from 63*m.* to 65*m.* per 100 kilos. Spermaceti, 295*m.* to 300*m.* per 100 kilos. Shellac steady, but very little business. Wax (Carnauba) quiet; grey, 75*m.*; fine yellow, 130*m.* per 100 kilos. Japan wax firm, at 78*m.* to 80*m.* for prompt delivery.

By telegram, on Thursday (September 2), he states that prices remain the same as per letter, though wax is advancing, 80*m.* per 100 kilos, being now paid for Japan wax. Camphor has sold at 258*m.*, and castor oil at 64*m.* per 100 kilos.

The Liverpool Drug-market.

Our Liverpool correspondent, writing on September 1, reports that the market for *Beeswax* remains steady, without any fresh features of interest. Three packages of *Peruvian* were sold at 6*l.* 15*s.* per cwt. In *Castor oil* there has been a steady upward movement in all grades during the week; large quantity of *Madras* good seconds changed hands at 3½*d.* per lb., and only a limited quantity of this grade now offers at the price named. In good seconds *Calcutta* the business done has been limited by the shortness of supply, prices ranging from 3½*d.* to 3¾*d.* per lb., and holders are now very firm at the latter figure. First pressure *French* is held with great firmness by importers at 3½*d.* to 3¾*d.* per lb., and a limited supply of second pressure is available at about 3¾*d.* per lb. In *Honey* the trade has been small for the most part, but small sales have passed in *St. Domingo* at 21*s.* per cwt. Sales of pile III. *Chilian* were made at 21*s.*, and 70 barrels of pile II. were sold in one line at 22*s.* per cwt. The market in *Canary-seed* has varied from day to day considerably, and sales during the week have been effected at 28*s.* to 30*s.* per quarter, and the former price is now quoted by holders, the tendency at the close being slightly weaker. *Gum arabic* sorts offer on the spot at 70*s.* per cwt. for fair hard, but the price stands in the way of business, very little resulting. Medium grades are rather neglected, and except for small lots of *Niger*, at 47*s.* 6*d.* per cwt., there is no business to record. The market for *African ginger* has steadily advanced during the week, and sales of 500 bags were made at 17*s.* 6*d.* per cwt., and small lots afterwards at 18*s.* per cwt. *Sulphate of copper* is still firm, at 16*l.* to 16*l.* 5*s.* per cwt. *Quillaia* bark is moving

steadily upwards, sales being made at 22*l.* 10*s.* to 25*l.* per ton, according to quality, and the quantity available now is very limited. In *Scammony-root* about 60 bales have changed hands at 30*s.* per cwt. for shipment. *Cream of tartar* is steady, at 80*s.* to 82*s.* per cwt. for first white.

Botanical Notes from Mincing Lane.

A BOTANICAL observer who visited the Mincing Lane showrooms lately gives us some notes of what he saw from his point of view. The goods which cover the tables, he writes, bring before our mind within a few yards the three divisions of the vegetable kingdom mixed together, not by any means in accordance with the views of a botanical systematist. In the dicotyledonous group we spot kola nuts, the true seeds of *Cola acuminata*, which about twelve years ago were to be had only from their native country, tropical Africa. About the time of the Colonial and Indian Exhibition, in 1886, when some fine fresh samples were shown from Jamaica and other West Indian islands, the cultivation of the plant was strongly recommended by some, and ridiculed by others—the wisdom of the former has since been shown. Coca-leaves, again, the produce of *Erythroxylon Coca*, are a comparatively new product which has thoroughly established itself, and which is a near botanical ally to the kola, though belonging to another natural order, *Linaceae*. Further on we see a sample of guarana, a peculiar substance from Brazil, made by beating up the small seeds of *Paullinia sorbilis*, a close ally to the horse-chestnut, into a pasty mass and then rolling it into thick sticks and drying it. The invigorating power of this substance has been known to the natives of Brazil for a very long period, and even at the present time they use guarana, as of old, in the preparation of a beverage by grating a small portion of one of the hard cakes or rolls into a cup of water and drinking the contents. For this purpose they carry a roll of the guarana, and the rough tongue of a fish to grate it upon, with them on their journeys. Its introduction into English commerce, like that of kola, is of comparatively recent date. Proceeding from the *Sapindaceae*, to which guarana belongs, the produce of a leguminous plant next catches the eye—namely, the hairs from the pods of *Mucuna pruriens*, popularly known as cow-itch, and in commerce as cowage or cowhage.

Looking round for some representatives of the monocotyledonous group of plants, our eyes rest on ginger and cardamoms—the former the rhizome, and the latter the fruit, of closely-allied plants belonging to the natural order *Scitamineae*. The *Iridaceae* is represented by some fine samples of orris-root, whether from *Iris florentina*, *I. pallida*, or *I. germanica* it is difficult to say. Some idea of the variety in habit of the *Liliaceae* may be gathered from a consideration of the plants yielding, on the one hand, the clean white slices of the bulbous squill which appear in quantities before us, and on the other the black inspissated juice, now hard and resin-like, which has flowed spontaneously from the wounded fleshy leaves of the aloes.

Coming down to acrogens or cryptogams, the sole representative of this group is Spanish ergot of rye, which is the largest in size as well as the most important commercially of all the ergotised grasses.

It may not be out of place to mention a sample of Boldo-leaves (*Peumus Boldus*), a Chilean shrub, which was introduced to this country in 1874 as an aid to digestion, and as a remedy in liver diseases. The discovery of the properties of the plant is said to have been made by noticing the beneficial effects on a flock of sheep that were suffering from liver disease. The fold in which they were enclosed having been repaired with boldo twigs, the sheep ate the leaves and shoots with the result that they rapidly recovered. Some singular-looking dried and shrivelled flowers have also been shown under the name of "Cactus flowers." Though they cannot yet be satisfactorily identified, they probably belong to the genus *Rhipsalis*, a group of fleshy jointed-branched leafless plants belonging to the *Cactaceae*. They are of but little or no use economically, though in Brazil the fruits of *Rhipsalis pachyptera* are reputed to have antiscorbutic and antibilious properties, and in the West Indies *Rhipsalis Cassytha* is used as a vermifuge.

Correspondence

In writing letters for publication, correspondents should adopt a concise, but not abbreviated, style. They are requested to write on one side of the paper only. Letters, with or without a nom-de-plume, must be authenticated by the name and address of the writer. Queries should be written on separate pieces of paper, and the regulations printed under the sections to which they apply should be strictly observed.

Notice to Correspondents.

Unqualified Medical Assistants.

SIR,—I have read the able article which appeared in last week's issue on "Dispensing in Doctor's Surgeries by Unqualified Men." While agreeing in the main with the facts there stated I have been—shall I say—amused, by the Pecksniffian tone of moral superiority adopted by the writer. Apparently he only saw the error of his previous conduct, after receiving the Pharmaceutical Society's diploma; and having reached the top of the wall in safety, calmly proceeds to kick away the steps which enabled him to get there.

I too, Sir, have dispensed medicines as an unqualified man in "Doctor's" surgeries, and can speak with some knowledge of the subject. Although the practice by medical men of dispensing their own prescriptions might be attended with some danger to the public, I am afraid the writer of the article referred to takes rather an alarmist view of the situation. I must, however, admit from my own experience that the system is open to abuse. For instance, on one occasion I was requested to go to another surgery owned by the medical man I was employed by. The dispenser there was ill, and as they were very busy—influenza being prevalent—and had run out of what is termed "stock mixtures," I was instructed by the doctor in charge "to give them anything, and put a little sacch. ust. in it." This I accordingly did, and I must in candour add, that if a patient had suddenly collapsed after a dose or two of the medicine—perhaps nothing more would have been heard of it. However, this might be an extreme case, but it shows that such cases do exist.

In my experience a great deal of surgery dispensing is done—at any rate in London—by medical students, who of course are not qualified in any way.

The crux of the matter appears to me to be this—Is it legal, under the Pharmacy Act, 1868, for a man unqualified under that Act to dispense for a fully qualified medical man?

The medical profession contend that they have a perfectly legal right to dispense their own medicines, with or without the aid of a capable dispenser, unqualified under the Pharmacy Act. They further contend, that the framers of this Act never intended it should come between a medical man and his patients. The attitude hitherto adopted by the Pharmaceutical Society seems to favour this view. Doctors say they supply medicine and advice for an inclusive fee, to suit the pockets of their patients, who they say would be unable to pay the extra fee charged by the chemist for dispensing their prescriptions. The public, they say, would thus suffer a pecuniary loss and get no better medicine. One medical man I knew told me he never trusted an outside chemist to dispense his medicines for him in accordance with his wishes.

If a medical man can legally employ an unqualified dispenser, why should he not do so provided the man be capable? One thing at least is certain—they will continue to do so until the Pharmaceutical Society take some active steps in the matter.

I am, Sir, yours faithfully,

FERRUM. (205/74).

SIR,—I have read with some interest the remarks "By an Ex-Unqualified" and was somewhat struck with the fact that he left that class of men severely alone who hold the assistants' certificate of the Apothecaries' Hall. Are they not legally qualified to dispense for medical men? If not, for what end are they examined? I have always thought they were examined in order to legally fill the posts he refers to.

Yours truly,

APOTH. HALL. (205/37.)

[The apothecaries' assistants' certificate is not recognised

by the Pharmacy Act, and therefore does not entitle the holder to "sell" a scheduled poison.—ED. C. & D.]

Colonial Cutting.

SIR.—In reply to Messrs. Ixion & Co.'s letter in your issue of June 19, *re* "Colonial Cutting," I very much doubt if any Australian chemist can throw out any hint that would benefit the home manufacturer, or assist him in any way to minimise the evil effects of cutting.

In Sydney we have a Whiteley, whose annual turnover is something in seven figures. In his patent-medicine department at present you can see ticketed—180 dozen Beecham's pills (56 in the box), 9d.; 700 dozen Calvert's 20 per cent. soap, 6d.; Mead's 1-inch adhesive plaster on spools, 1s. each; 50 dozen pain-killer (Perry Davis), 10½d.; 100 dozen Mrs. Allen's hair-restorer, 3s. 9d.; Pears' soap, in any quantity, 3½d. per cake; 120 dozen curling tongs (a good 1s. line), 1½d. each; 100 dozen cloth brushes, three for 1s., &c.

I ask Messrs. Ixion & Co. how we Sydney chemists can assist the home manufacturer against colossal opposition like this! He actually retails most of the well-known lines 10 and 20 per cent. cheaper than we buy from the wholesale houses. I doubt very much if even Mr. Glyn-Jones could throttle this monster. The firm I refer to has large offices and warehouse accommodation in London for buying and shipping purchases, and all their transactions are for spot-cash.

Yours truly,

155 George Street, Sydney, N.S.W.

W. G. GRIGOR.

Humfrey Lloyd and the Treasury of Health.

SIR.—Your readers are under a debt of gratitude to you and "One of the Twenty-five" for the entertaining and well-illustrated article on the above subject, published in your issue of August 28.

Not the least interesting part of the review was the old author's references to the "places of Scripture which seem to make for the prayse of physyke." The first thing that strikes one about his quotations is that the references are not always correctly given. Thus the one on the title-page, "The Lord hath created physyke of the earth, and he that is wyse wyll not abhorre it" (Ecclesiast. xxxvii.), is not from Ecclesiastes, but from the Apocryphal book Ecclesiasticus, and is to be found in the 38th instead of in the 37th chapter. Then, again, the story of Hezekiah's boil is placed in Reg. 4, cap. x., whereas it occurs in chapter xx. The passage quoted is probably Lloyd's own epitome of the occurrence as narrated in verses 1 to 7 of our version:—

Hezekiah was sycke to the death, and after he had prayed to the Lord he sent Isayahe unto hym, who put a lumpe of fygges vpon the sore, and he recovered.

This fourth book of Kings is, of course, our second book; what we know as 1st and 2nd Samuel were formerly named 1st and 2nd Kings. Further, the absence of verse reference by our author is a reminder of the fact that up to 1560, when the Genevan Bible appeared, the chapters had not been cut up into verses. The versions in use in Lloyd's day were Tyndale's (1526), Coverdale's (1536), and the "Great" or "Cromwell's Bible" (1539). A comparison of the same passage in various translations of the Bible forms an interesting study in the transition of the language. Wycliffe's (the first English version, 1382) reads as follows:—

In tho daies Ezechie was sijk til to the deeth. . . . And Ysaic seide, Brynge ye to me a gobet of figis. And whaune thei hadden broughte it and hadde putte on his botche, he was heeld.

Other old versions of the fourteenth century have "a masse of figgis" and "an hep of fyges." Coming to the sixteenth century, the "Breeches" Bible has "a lumpe of drie figges," which the Authorised Version simplified to "a lump of figs," and now the Revised Version reads, "a cake of figs."

Returning to Humfrey Lloyd, he cites Exodus xv. as another place of Scripture "making for the prayse of physyke." This is the Marah incident, when Moses cast a tree into the bitter waters, and thereby made them sweet. One is a little puzzled to divine the reason which led Master Humfrey to class this episode (usually regarded as miraculous) among the passages relating to the healing art. But a glance at the chapter already quoted on the title-page reveals his authority. Ecclesiasticus 38 is a

præan sung in honour of the physician, and in praise of medicine, and it includes a reference to the waters of Marah. Here are a few of the verses:—

Honour a physician according to thy need of him, with the honour due unto him. For verily the Lord hath created him.

The skill of the physician shall lift up his head. And in the sight of great men he shall be admired.

The Lord created medicines out of the earth; and a prudent man will have no disgust at them.

With them doth he heal a man, and taketh away his pain.

With these will the apothecary make a confection.

Was not bitter water made sweet with a tree, that men might learn to know the virtue thereof?

It has been assumed in some quarters that Moses made use of the berries of the Ghurkud (*Nitraria tridentata*), but the suggestion is discredited by most Biblical scholars.

The remaining passages mentioned by Lloyde are those referring to the cleansing of lepers. In the ceremonials attaching to this priestly rite use was made of cedar-wood, scarlet (prepared from *coccus ilicis* or *kermes*) and hyssop, all of which were highly esteemed among the ancients for their medicinal virtues.

Yours truly,

Brighton, September 1.

C. S. ASHTON.

DISPENSING NOTES.

This section is intended for the elucidation of dispensing difficulties. Subscribers and their employes may contribute to it, criticising any of the following notes or contributing notes on prescriptions which they have found to be of unusual interest.

Cocaine with Perchloride of Mercury.

197/70. *Ginger* had this prescription to dispense, but could not obtain a satisfactory product:—

Hydrarg. perchlor. ...	...	...	gr. iij.
Cocain. hydrochlor. ...	...	...	gr. iv.
Pot. chlorat. ...	...	...	gr. v.
Glycerini ...	...	...	ʒj.
Aq. ad ...	...	...	ʒss.

M.

Mixed in various ways a copious precipitate is always obtained, because the perchloride of mercury precipitates cocaine. By using ʒij. of glycerine and ʒij. of water a more satisfactory product is obtained, but the preparation cannot possibly exhibit the full therapeutic activity of the alkaloid and the mercuric salt, so the prescriber should be advised to change his prescription.

Vasogene.

SIR,—Will you kindly inform me what is intended by the following, which is a Russian prescription; as dispensed in Russia it is an oil:—

Chloral hydrat. ...	...	...	6, O.
Vasogen ...	...	...	30, O.

I have endeavoured to dissolve the hydrate in vaseline, but it crystallised out again.

Yours truly,

LINDUM. (205/47.)

[See the subjoined reply to another correspondent. Mr. Poppelreuter, of Manchester, is agent for vasogene, the properties of which were fully referred to in the *C. & D.* when it was introduced as a "new remedy."]

203/25. *C. B.*—**Vasogene** consists of a soft paraffin impregnated with oxygen with the idea of increasing its solvent action on various drugs, such as iodine, menthol, ichthyol, &c., and presenting them in a readily absorbable form. It forms an emulsion with water.

198/13. *Torquinian*.—**Mist. Salicin. Co.**—This is most likely a mixture containing salicin and liquid extract of liquorice. Perhaps some of our Cheltenham readers will oblige with the exact formula.

196/46. *Mike*.—The reason for "shake-the bottle" label upon bottles containing mixture of acid. hydrocyan. dil. is to ensure the reabsorption of any vapour of the acid collected in the space between the liquid and the cork.

LEGAL QUERIES.

We do not give legal opinions by post. Information regarding most legal matters in connection with pharmacy will be found in THE CHEMIST'S AND DRUGGISTS' DIARY, and in "Pharmacy and Poison Laws of the United Kingdom," and Alpe's "Handy-book of Medicine-stamp Duty."

200/24. *Arsenic*.—Arsenical fly-papers come under part 1 of the schedule to the Pharmacy Act, and the sale of them should be registered.

203/24. *Midlander*.—The handbill you suggest is perfectly legal. It simply says, "Teeth carefully stopped, scaled, or extracted at most reasonable charges," and gives the address of a chemist. We should think our committee would readily defend a chemist who might be prosecuted on that alone; but, of course, we cannot give any undertaking.

204/31. *Rhei*.—Antimonial wine is a poison within the meaning of the Act. Tinct. digitalis is not, nor is tinct. gelsem. We note that your opinion does not agree with ours as to spirit and water of chloroform.

204/28. *Inquirer*.—We know of nothing to prevent your calling yourself "Graduate in Pharmacy" if you wish to do so, seeing that you have graduated. The Society you refer to is not an institution of any reputation. We do not know the exact address, but probably a letter sent to Kensington would find its way.

198/37. *Bradfordian*.—You will find full details of the Canadian examinations in "Pharmacy and Poison Laws," published at this office, 2s. 6d. We do not know that there is any demand for English assistants in Canada. Perhaps Messrs. Evans, Sons & Co., of Liverpool (who have a corresponding firm in Canada), would give you some advice.

MISCELLANEOUS INQUIRIES.

We reply to our subscribers and their employes only; queries must, therefore, be authenticated by the name and address of the subscriber. When more than one query is sent write each on a separate piece of paper. When a sample accompanies a query full particulars regarding the origin and use of the sample must be given, and the name of the querist should be placed on the sample. Queries are not replied to by post.

201/34. *Wife*.—Ten shillings a week seems too little for board and attendance for an assistant. We should think it ought to be at least 15s.

203/14. *J. C. G.*—Unfermented wines.—See *C. & D.*, August 7, 1897, page 250.

201/29. *Hair Dye*.—(1) We have found the pyrogallol hair-dye answer very well. The hair requires well washing before using it, and the dye to be used two or three times to get the maximum results. (2) **Brown Hair-dye** (silver)—

Sol. A. Nitrate of silver ...	...	...	20 grs. to ʒj.
Sol. B. Sulphurated potash ...	...	...	ʒj. to ʒj.

Apply the solutions separately, and after a few minutes wash the hair in soft water.

(3) **Brown Hair-dye** (copper)—

Pyrogallol ...	...	...	ʒij.
Cupri. chlor. ...	...	...	ʒij.
Aque ad ...	...	...	ʒiv.

Solve.

201/26. *J. J.*—**Indian Brandee**:—

Sp. æther. nitr. ...	...	...	ʒiv.
Tinct. rhei ...	...	...	ʒiv.
Syrupi ...	...	...	ʒj.

M.

197/34. *Mizpah*.—The recipe is a usual one for the purpose, and answers very well.

199/54. *Sponges*.—The Numbers on the Sp. Gr. Beads indicate in thousands the specific gravities of the liquids in which they float perfectly.

202/40. *Rhei*.—*Asthma-cure*.—

Pulv. lobelie ...	...	...	...	5ij.
Pulv. stram. fol. ...	...	...	...	5ij.
Pulv. theae. nig. ...	...	...	...	5ij.
Pulv. potass. nitr. ...	...	...	...	5ij.
Pulv. anisi ...	...	...	...	5ij.
Pulv. foeniculi ...	...	...	...	5ij.

M.

201/42. *H. J. O.*—(1) A handfull of grass will provide ample green colouring-matter for your ointment. (2) In making ung. samb. vir. there is no occasion to add any colouring, as elder-leaves contain abundance of chlorophyll.

203/29. *Alpha*. *Aloetic Mass for Physic Balls*.—

Aloes barb. ...	...	...	...	lb. j.
Pulv. zingib. ...	...	...	...	5ij.
Glycerini ...	...	...	...	5ij.
Ol. ricini ...	...	...	...	5ij.

Melt the aloes, glycerine, and oil in a water-bath, and stir in the ginger—5iss. = 5j. of aloes.

197/19. *P. M. D.*—*Borax, Camphor, and Rosemary Hair-wash Powder for 1d. packets*.—

Pulv. boracis ...	...	...	...	5iv.
Pulv. saponis ...	...	...	...	5iv.
Pulv. camphor. ...	...	...	...	5j.
Pulv. sodii bicarb. ...	...	...	...	5viij.
Ol. rosmarini ...	...	...	...	℥30

M.

Put up in $\frac{1}{2}$ -oz. packets.

200/53. *Timon*.—The almond-like odour you observe in some cosmetics is due to coumarin. Generally a little heliotropin, oil of bitter almonds, or otto of rose is combined with it.

201/66. *W. T. H.*—(1) Use isinglass in place of glue in the China Cement. With glue you will only get a liquid. (2) *Marking-ink*.—The application of heat is for the purpose of accelerating the action of silver marking-ink on linen fibres. This is a matter of oxidation chiefly, so that if you leave it long enough before washing the action would take place without heat. For an ink not requiring heat, an aniline one, such as that given in *C. & D.*, March 28, 1896, page 476, is required.

202/60. *R. D.*—For Custard-powder use Oswego corn-flour tinted with saffron, and flavoured with a mixture of equal parts of ess. limonis and ess. amygd.

201/2. *G. J. G.*—The Mixture for Indigestion consists principally of bicarbonate of soda and infusion of gentian, but is not of sufficient general interest to warrant a fuller analysis.

199/36. *C. W.*—Your sample of Nit-pomade consists apparently of powdered white hellebore in the proportion of 2 oz. to 1 lb. of a basis consisting of resin, wax, and lard.

193/65. *Midlander*.—Metal-polish.—See page 354 in last week's issue. To put up in tins add to the formula 1 part of red oxide of iron, and use ung. petrolei instead of the mineral oil.

191/37. *Buensil*.—For Crows'-feet and relaxed skin around the eyes a persistent course of continuous friction one way with simple benzoin lotion and eau de Cologne alternately, finishing at night with lanolin cream, has been recommended.

196/56. *Dispensing Chemist*.—*Glycerine Suppositories*.—Soak the gelatine in 4 oz. of water for a few minutes, drain off the water and allow to stand half an hour, then add the glycerine, and dissolve.

193/14. *Anatomy*.—The hinge-joint is at the elbow, ball-and-socket at the shoulder and the thigh, and the collar-and-pin is the little joint beneath the hinge where the ulna meets

the radius. This is hardly in our line, and you would do well to consult some popular work. There are many cheap manuals to be had.

189/25. *Carbo*.—The Tic and Headache Powders consist of acetanilide (gr. vj.), sugar, and turmeric to colour. The addition of a little phenacetin would be an improvement—say, acetanilide gr. iv. and phenacetin gr. iij.

197/73. *Chemicus*.—The substance which you mention as being used for giving body to stout is a caramelised mixture of maltose and glucose.

190/66. *P. A. T. A.*—*Teething Powders*.—The following is perfectly safe:—

Hydrarg. subchlor. ...	...	...	gr. j.
Pulv. sacch. alb. ...	...	...	gr. j.

M.

A fourth for an infant under 6 months, half for 6 to 9 months, and a whole powder for 9 to 12 months.

Fever Powders for children generally consist of:—

Potass. chlorat. ...	...	...	gr. j.
Pulv. glycyrrhiz. ...	...	...	gr. j.
Pulv. sacch. alb. ...	...	...	gr. iij.

Ft. pulv.

The powder which you mention contains calomel and a soporific.

194/17. *H. C. Leeds*.—For Foot-rot in Sheep:—

Ac. nitric. fort. ...	...	...	5j.
Hydrargyri ...	...	...	5j.
Ac. hydrochlor. fort. ...	...	...	5j.
Liq. antim. chlor. ...	...	...	5j.

M.

This is much too strong, and should be diluted with from 6 to 12 parts of water before using. Great care also would require to be taken in its preparation.

189/24. *Hair-curling Fluids*.—Lime-water, solution of carbonate of soda, and borax (1 of each in 16 of water), to which 1 in 10 of a spirituous perfume is added, and weak tragacanth mucilage containing $\frac{1}{2}$ oz. of liq. potassæ to the pint. These are some of the things used.

186/13. *M. P.*—Your sample of Cream Powder seems to consist of—

Cream of tartar ...	...	...	1 part
Sulphate of potash ...	...	...	2 parts

Mix.

The colouration you complain of has in certain instances been traced to the soda. Alum prevents it.

205/33. *H. J. O.*—We must decline to award first position to a trade journal. You may be surprised to hear it, but journalists are sensitive persons.

203/69. *Perplexed*.—The marking-ink stains are not silver stains, but an aniline ink. We have succeeded in removing them by alternate immersion in hydrochloric acid and solution of chlorinated lime. The process, however, was very tedious.

INFORMATION WANTED.

The Editor will be obliged for replies to the following from any who can furnish the information.

205/7. Agent for Little's spring indiarubber corks.

203/57. French temperance-drink patented by M. Carstins and sold as "champagne-milk": maker's address.

205/71. Where can mushrooms be bought in quantity?

110/97. Makers of hygeia disinfecting fluid and powder.

189/24. What are Adam and Eve leaves and Trinity leaves?

191/70. What is hedgehog oil? used for deafness; where obtainable?



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Chancery Division, *1897, F. No. 843.*
FERRIS & CO. v. THOMAS BUXTON.

Chancery Division, *1897, F. No. 1014.*
FERRIS & CO. v. OCTAVIUS CORDER.

NOTICE IS HEREBY GIVEN that by two several orders of the Chancery Division of the High Court of Justice, made respectively the 18th of June and the 16th of July, 1897, in the above Actions, the respective defendants and others were perpetually restrained from dispensing, selling, or supplying, or offering for sale or supply, under the name "NEPENTHE" or any colourable imitation thereof, any medical preparation NOT prepared by us, and from in any manner infringing our registered Trade Mark "NEPENTHE," No. 464.

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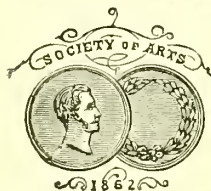
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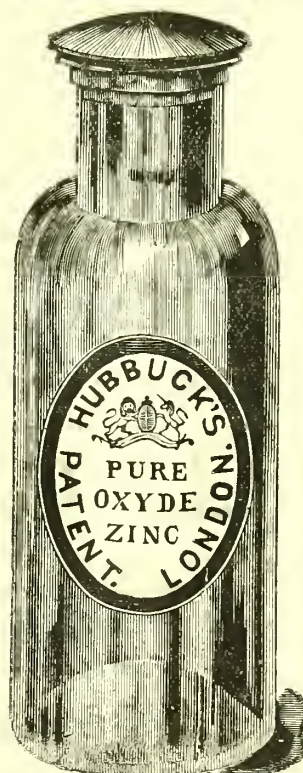
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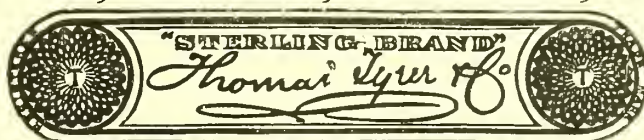
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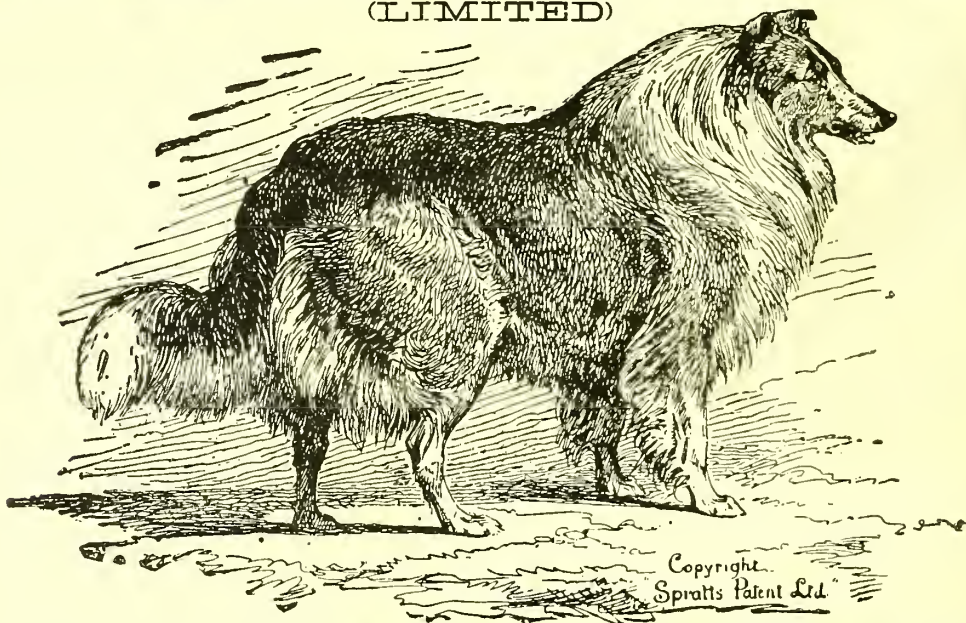
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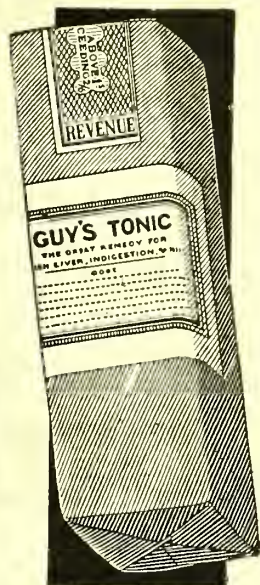
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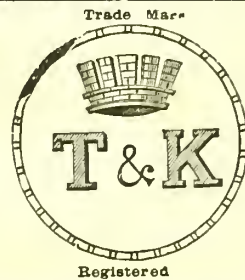
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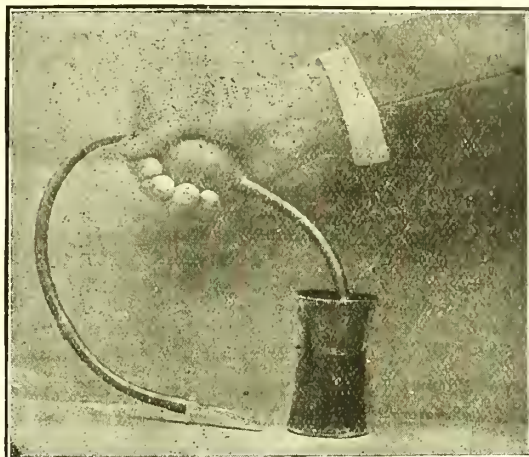
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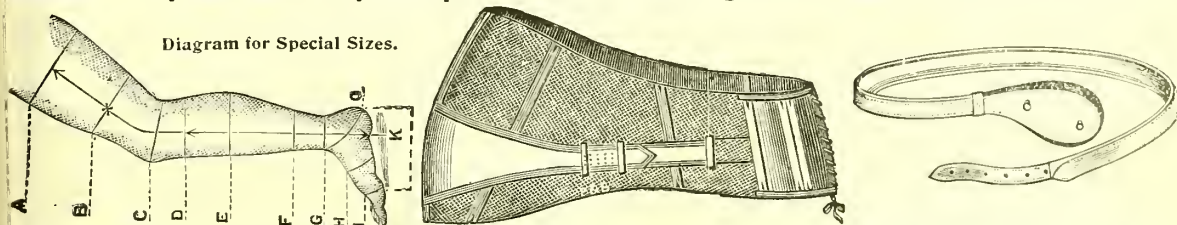
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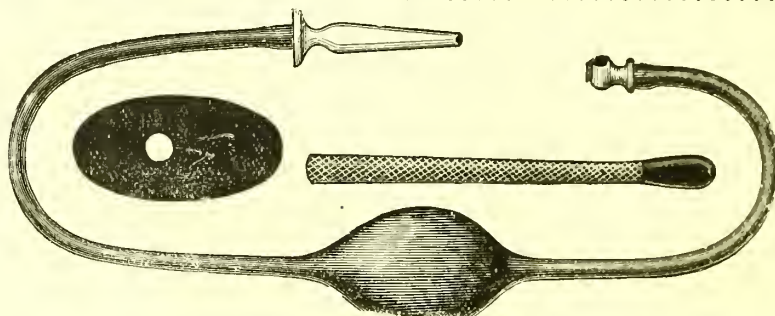
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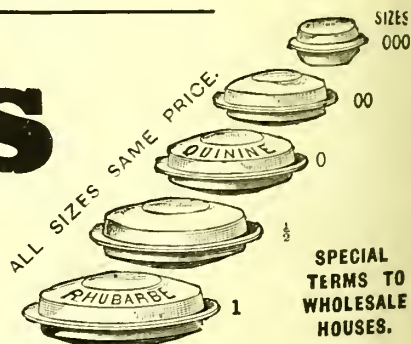
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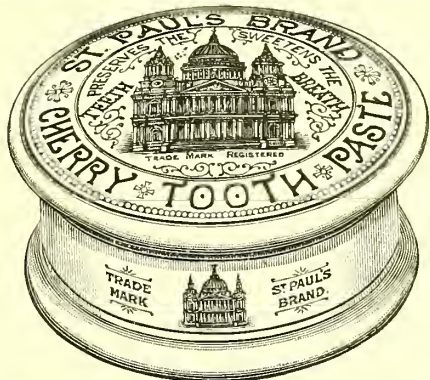
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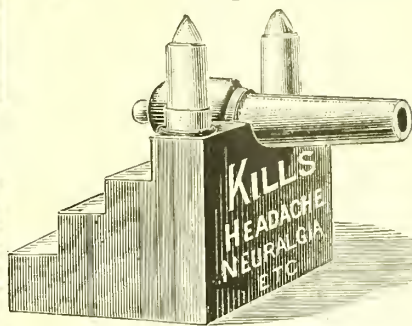
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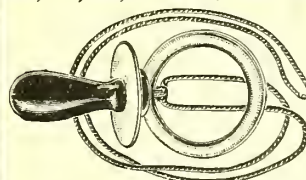
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TIDMAN'S SPECIALITIES

5 PER CENT. DISCOUNT FOR CASH. £5 Orders Carriage Paid in United Kingdom.

Tidman's Sea Salt (bags to retail at 1d.)	8/3	per Gross
" " (packets " 1½d.)	12/3	"
" " (3-lb. boxes)	5/3	per Doz.
" " (7-lb. ")	10/3	"
" " (14-lb. ")	18/9	"
" Glycerine and Cuc. Soap	1/6	"
" White Rose and Cuc. Soap	1/6	"
" Marshmallow Soap	1/6	"
" Eucalyptus Soap	1/6	"
" Oatmeal & Coal Cream Soap	1/6	"
" *Cold Cream and Glycerine	1/6	"
" *Sulphur Soap	1/6	"
" *Sulphur & Glycerine Soap	1/6	"
" *Musk Brown Windsor Soap	1/6	"
" *Cold Cream and Cuc.	2/0	"
Wesley's Carpet Soap	3/0	"
" Coal Tar Soap	1/6	"
" Carbolic Toilet Soap	1/6	"

Tidman's 4d. Salicylic Soap	7/6	per Doz. Boxes
" 6d. "	10/6	"
" Creamoline "	8/6	"
" Assorted Toilet Soaps	5/0	"

The above are all wrapped in attractive Wrappers, and packed in Fancy Boxes containing 3 Tablets.

Tidman's Assorted Toilet Soaps		
12 unwrapped ¼-lb. Tablets in Box	15 0	per Doz. Boxes
Tidman's Round Rose Soap, Milled,		
1 doz. in Box	18/0	"
Wesley's Petroleum Pomade, 6d. size	3/0	per Doz.
" " 1s. "	6/0	"
" Linen Glaze, 1d. size	1/6	"
" " 3d. "	1/6	"
" "Kaiser" Eau de Cologne, 2 oz.	6/6	"
" " 4 " "	12/0	"
" " 12 " "	34 0	"
" " Wickered, ½ Pint	19/0	"
" " 1 " "	36/0	"

SPECIAL LINE.

CORN AND WART SOLVENT, retail at 4d.; 1 doz. on card, 2s. 4d. per doz.; 24s. per gross.

Special Quotations for Quantities.

All the above Soaps are wrapped in attractive Wrappers, and packed in Boxes of 1 doz. Tablets.

Marked * are Milled Soaps.

TIDMAN & SON. LIMITED

Busheil Street, Great Hermitage Street, and High Street (Melbourne Wharf), WAPPING, E.

Telegraphic Address—"BLUEBERRY LONDON."

(Near the Tower Bridge and the Docks.)

Telephone No. 392, Avenue.

Customers calling and selecting their own Goods to the value of £5 and upwards will be credited with cost of Cab Hire from City if incurred.

Look to your Stock

O F

MAYPOLE SOAP.

The Demand is Phenomenal!

DR. SCOTT'S BILIOUS & LIVER PILLS.

The Proprietors of the above well-known Pills have decided in the interest of the Retail trade to stop all further cutting and allow a reasonable profit, and in so doing hope to secure the goodwill and co-operation of all respectable Chemists and Druggists.

A GOOD PILL and GOOD PROFIT.

1/1½ size	Wholesale Price, 10/- per dozen.
" " " " " " "	Minimum Retail Price, 1/- " box.
2/9 " " " " " "	Wholesale Price, 24/- " dozen.
" " " " " "	Minimum Retail Price, 2/6 " box.

The proprietors will be obliged if Chemists will report all cases of Cutting to
THE SECRETARY, PROPRIETARY ARTICLES TRADE ASSOCIATION,
2 and 3 STONECUTTER STREET, E.C.,
 who will see that the Cutting is stopped or supplies withheld.

Messrs. LAMBERT & CO. will be pleased to supply Handbills, with Name and Address, CARRIAGE PAID, on receipt of Business Card direct to
 173 Seymour Place, London W.

They stand alone in their might.

The "GIANT" Remedy, BOX'S PILLS

Re-christened by the Americans
"THE GREAT ENGLISH REMEDY,"
 Grapple with and triumph over disease with perfect ease.
 Price 1/1½, 2/9, 4/6, 11/-, and £1 is. per box.

Prepared by
W. H. BOX, 161 KING ST., PLYMOUTH.

X RAYS PILLS.

An excellent Remedy for Biliousness and all Liver and Kidney Complaints.

A GOOD PILL AND PROTECTED PROFIT.

1/1½ Size ..	Wholesale Price, 9/- per dozen.
" " " " " "	Minimum Retail Price, 1/- per bottle.
2/9 " " " "	Wholesale Price, 24/- per dozen.
" " " " " "	Minimum Retail Price, 2/6 per bottle.

PREPARED ONLY BY THE
RAY'S MEDICINE CO., North Parade & Manor Row, **BRADFORD.**

Handbills supplied free, with Name and Address, on receipt of Business Card direct to above address.
AGENTS WANTED EVERYWHERE.

PILLS

(UNCOATED).

SAMPLE LINES.

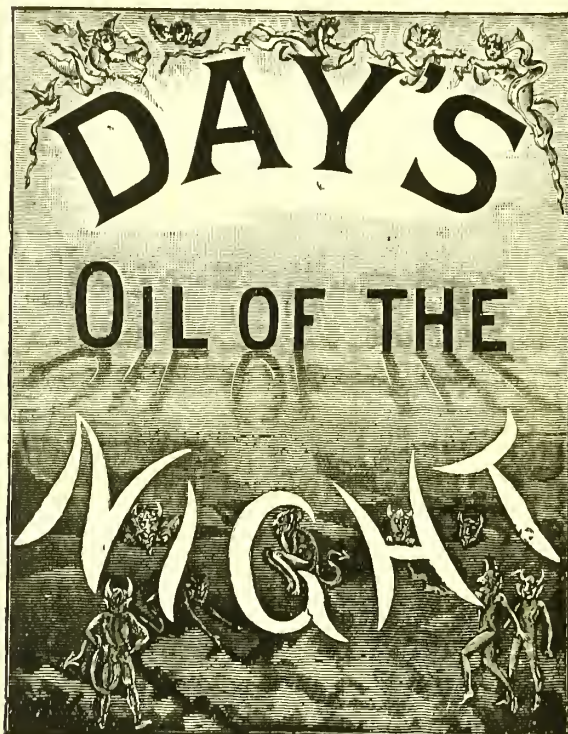
- Head, Stomach, and Liver, Pil. Rhei c. Zingib., eminently suited for all classes of trade, 20 gross (grs. 3 or 4), carriage paid, 5/-.
- Tic Pills, containing ½-grain Quinine, 20 gross (grs. 3 or 4), carriage paid, 7/6.
- Pil. Rhei Co. (grs. 3 or 4), B.P., 20-gross lots, carriage paid, 5/- 2-grain Pills 15 per cent. less.

PACKING is our Speciality.

- 4d. Health Salt, in decorated tins, 25/- gross, delivered.
 - Special line in Headache Powders, loose, on cards of 2 dozen, per gross 4/-, carriage paid. 10-gross lots delivered for 35/-. Own name and matter on 10-gross lots free.
 - 1d. Pills (Head, Stomach, Liver, and Tic), on ¼-gross cards, 4/- gross; 10 gross, 35/-. All orders carriage paid.
- SAMPLES AND PARTICULARS ON APPLICATION.

BRIDGWATERS, Ltd. Factory: W. Bromwich.

DAYS' OIL OF THE NIGHT



THE GREAT EMBROCATIVE BALM

Has now been proved well in front of any preparation for similar uses, and its sale is increasing by leaps and bounds.

Neat Printing Gratis with every order from Crewe.

DAYS' OIL OF THE NIGHT

(HUMAN USE).

The Embrocative Balm for Rheumatism, Sciatica, Lumbago, Sprains, &c., &c., and all Aches and Pains.
1/1½, 2/9. and 6/6 per bottle, less discount.

DAYS' OIL OF THE NIGHT

(VETERINARY).

The Great Embrocation for Sprains, Swellings, Sore Throats, &c., &c., in Horses and Cattle.
1/-, 2/6 and 6/- per bottle, less discount.

From Wholesale Houses, or direct.

DAY & SONS, CREWE.

Established 1840.

**Day & Sons,
Grewe.**

Established 1840.

**Day & Sons,
Grewe.**

HORSE AND CATTLE MEDICINES.

LARGEST SALE IN THE WORLD.



For Colic and Gripes in Horses, Hoven or Blown Cattle and Sheep, Scour in Calves, &c.
1s. 8d. per bottle, or 19s. per dozen.

DAYS' "PURIFIED" DRIFIELD OILS.

("DAYS' OILS.")

Heals Kicks, Cuts, Stake Wounds, Broken Knees, &c.; Safely Heals all Wounds in all Animals; a Soothing and Antiseptic Oil for Lambing and Calving.

Price 2s. 6d. and 6s. per Bottle.

DAYS' WHITE OILS.

Unequalled as a Safe Embrocation for all Stock; for Sprains, Swellings, Wind-galls, Sprung Sinews; for Rheumatism, Sore Throat, Weak Joints; for Cuts and Splints when forming.

Price 2s. 6d. and 6s. per Bottle.

THE "ORIGINAL" UNIVERSAL MEDICINE CHEST.

For Disorders of HORSES, CATTLE, and SHEEP.

Price, with Guide, "Everyday Farriery," £1 4s., £2 4s., and £5.

DAYS' RED DRINK (OR COW DRENCH).

Cures Fever and Costiveness in Cattle; Cleanses and Cools the Blood and System; for Red Water, Indigestion, and Yellow; Cures Bad Cleansing and Prevents Milk Fever.

Price 12s. per dozen Packets.

The "EWE DRENCH" acts as above for sheep. 8s. 6d. per dozen.

DAYS' HUSKOLEIN.

The most successful remedy for Hush, Hoose, or Hoast in Stock, and Worms in Horses, Colts, and Dogs.

Price 6/6 per bottle, 5 bottles 30s., or 12 bottles, £3.

THE "ORIGINAL" HORSEKEEPERS' MEDICINE CHEST.

Arranged specially for Disorders in HORSES.

Price, with Guide, "Everyday Farriery," £1 4s., £2 4s., and £5.

Harmless Antiseptic & Disinfectant Gas.

The Problem of a Harmless Antiseptic has been now solved by the introduction of

The "Alformant"

(REGISTERED TRADE MARK),

An elegant
and ornamental Lamp capable of
distributing from

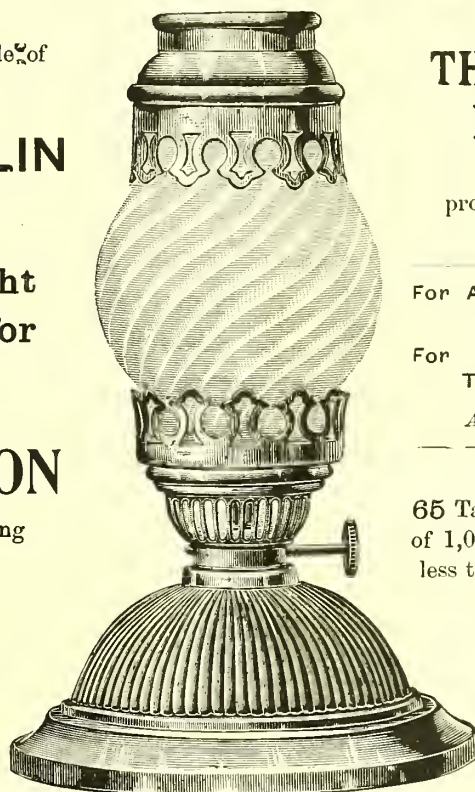
**DRY FORMALIN
TABLETS,**

**2½ times by weight
Formalin Gas, for**

**AIR
STERILISATION**

in the Sick, Bed, and Living
Room,

R.L.P.



And for

**THOROUGH ROOM
DISINFECTION**

by definite
proportion of Gas to any given
Room capacity.

For Air Sterilisation use 1 Tablet
for 1,000 cubic feet.

For Effectual Disinfection use 10
Tablets for 1,000 cubic feet.

As proved by eminent authority.

HARMLESSNESS.

65 Tablets gasified in a room capacity
of 1,000 cubic feet have proved harm-
less to the respiratory organs of man.

12/6 each.

ANTISEPTIC TREATMENT of WOUNDS.

DR. SCHLEICH'S GLUTOL

A fine powdered Formalin Gelatine, is the ideal antiseptic in the treatment of fresh or infected wounds. Self-applying and protective, forming a firm scab in a short space of time, needing no other antiseptic treatment. **2/6 per tin of 1 oz.**

GLUTOL SKINS, for painful and swollen skin surfaces. **2/6 per oz.**

FOR ALL PARTICULARS APPLY TO

THE FORMALIN HYGIENIC CO., Ltd., 9 & 10
ST. MARY-AT-HILL, LONDON, E.C.

Visitors to the Sanitary and Hygienic Section of the Imperial Victorian Exhibition at the
Crystal Palace are invited to inspect at **Stand No. 23.**

SUPPLIED TO HER MAJESTY'S GOVERNMENT.

IZAL PREPARATIONS. IZAL

Antiseptic. Non-Poisonous. Non-Irritating.

IZAL is an emulsion of Izal Oil. Mixed with 200 parts of water it gives an antiseptic lotion which is non-irritating, non-poisonous, and very much more powerful and persistent in its action than pure Carbolic Acid on account of the insolubility and low volatilisation point of the Oil.

IZAL has now been in use in several of the large hospitals for 2 or 3 years, and all that is claimed for it has been amply confirmed.

Bacteriological research by eminent specialists, whose reports will be forwarded on application to Messrs. Newton, Chambers & Co., has shown the certainty and speed with which IZAL destroys even the most resistant of Bacteria.

As a general disinfectant, for economy and pleasantness, IZAL is second to none; and its persistent and non-poisonous properties have already rendered it invaluable in the cleansing of Bakehouses.

IZAL for medical use is indicated as an internal antiseptic, and should be employed in Typhoid Fever and specific diseases, since it has been shown that, although itself non-poisonous, IZAL has the power of destroying the effect of the noxious alkaloidal products of Bacteria.

IZAL should be employed in Phthisis not only as a disinfectant, but also medicinally, with a view of combating the micro-organism in the tissues, and arresting the disease.

IZAL is prepared for a variety of purposes, as:—

IZAL Emulsion for Disinfecting purposes
6d. 1/-, 2/6, and 4/6 per bottle.

IZAL Emulsion for Surgical and Internal Administration 1/6 & 2/6 per bottle.

IZAL Cream, in Tubes 1/1½ tube.

IZAL Soap, in 1-lb. or 3-lb. bars ... 3d. per lb.

IZAL Medical Soap, 8 tabs. in box ... 2/- per box.

IZAL Toilet Soap, 3 tabs. in box .. 1/3 per box.

IZAL OINTMENT is *par excellence* the antiseptic application of the future. It is cooling and antipruritic, as well as antiseptic.

In skin diseases it is invaluable, for there is hardly a case of skin disease, as a well-known specialist recently remarked, in which at some period or another of its course, antiseptic and antiparasitic remedies are not indicated.

On account of its great persistence, it is especially useful in killing the resistant fungi of ringworm, favus, pityriasis versicolor, &c., and the parasites (pediculi, acarus, &c.).

IZAL Lint, Izal Gauze, and Wool are now prepared and put up, as it has been found how well wounds heal under the continued stimulating and antiseptic influence of IZAL.

IZAL SOAP, Medical and Toilet, contains a sufficient percentage of IZAL to render a remedy so persistent in its action of practical use in keeping the hands and body surgically pure—unlike carbolic soap, the action is not evanescent.

Every surgeon, accoucheur, and nurse should make a habit of always using IZAL soap.

IZAL TOOTH POWDER is a delicate, pleasant, and elegant preparation, and forms an admirable antiseptic for the mouth and teeth. Much of the early decay, produced by acid forming bacteria, might be arrested if IZAL were regularly employed.

IZAL CREAM is essentially a toilet preparation for the purifying, clearing, and softening of the skin, and is especially indicated in acne and pustular eruptions about the face.

IZAL Lint 2/4, Cotton Wool 2/- per lb.

Gauze 1/- per 6-yard length.

(To be had from the Maker, JOHN MILNE, Antiseptic Dressing Factory Ladywell, London.)

IZAL Lozenges 1/1½ per box.

IZAL Ointment 1/1½ per jar.

IZAL Tooth Powder 6d. and 1/- per box.

IZAL Embrocation 1/1½ per bottle.

NEWTON, CHAMBERS & CO., Lim., Thorncliffe, Sheffield.
Liverpool Depot—50A LORD STREET, LIVERPOOL.

To be obtained through the Wholesale Patent Medicine Houses, or of

ALLEN & HANBURY'S Ltd., Bethnal Green, LONDON, E.

THE GREAT AND MARVELLOUS INSECT DESTROYER.

Entirely different from any other Beetle or Flea Powder.

"VIKO" will kill Cock-roaches.
"VIKO" will kill Moths
"VIKO" will kill Fleas.
"VIKO" will kill Bugs.
"VIKO" will kill Mosquitoes.
"VIKO" will kill Ants
"VIKO" will kill all Insects.
"VIKO" will not kill Dogs.
"VIKO" will not kill Cats.



"VIKO" as a preventive against Moth is unrivalled. It has no equal. If sprinkled amongst Furs and Clothes instantly destroys any existing Insect Life, and ensures perfect freedom from a return of the pest.

Its effect upon Insect Life is simply marvellous.

REGISTERED.

Sold in 3d. 6d., & 1s. Tins.

SOLE PROPRIETORS—

TUNBRIDGE & WRIGHT, READING.

Manufacturers of the "World-Famed FLY CEMETERY."

TO PREVENT DISAPPOINTMENT, ORDER EARLY.

The World Famous Sticky Fly Paper.

'THE FLY CEMETERY'

FREE FROM POISON.

The Original and by far the Best Sticky Fly Paper in the Market.

Annual Sale—MILLIONS.

BEWARE
OF THE MANY
SPURIOUS
IMITATIONS
IN
THE MARKET.



STOCK
A FLY PAPER
THAT WILL GIVE
SATISFACTION
TO YOUR
CUSTOMERS.

Terms, &c., from

TUNBRIDGE & WRIGHT, READING.

North of England Depot—4 Gallowgate, Newcastle-on-Tyne.

French Agency—34 Rue St. Martin, Cognac.

IMPORTANT NOTICE.—If any of our customers have any over year's stock of our Fly Cemeteries on hand, we shall be pleased to exchange same for fresh goods free of cost.

TELEGRAMS—"FLIES READING."

THE FLYDOOMO

FLY STICKERS

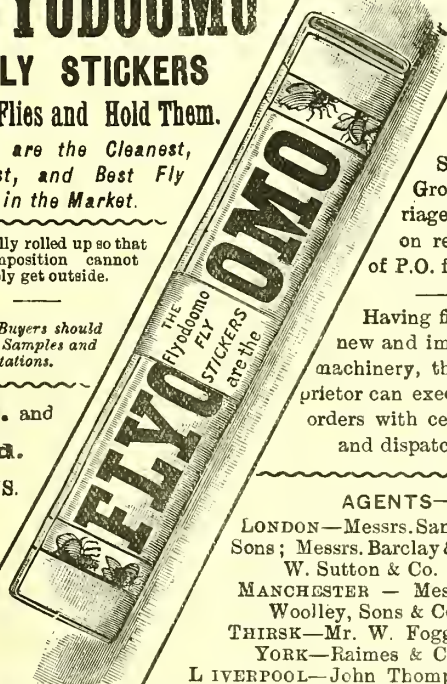
Catch Flies and Hold Them.

They are the Cleanest, Stickiest, and Best Fly Papers in the Market.

Carefully rolled up so that the Composition cannot possibly get outside.

Large Buyers should write for Samples and Quotations.

1/2d. and
1d.
SIZES.



Sample Gross, Carriage Paid on receipt of P.O. for 5/-

Having fixed up new and improved machinery, the proprietor can execute all orders with celerity and dispatch.

AGENTS—

LONDON—Messrs. Sanger & Sons; Messrs. Barclay & Sons; W. Sutton & Co.

MANCHESTER—Messrs. Woolley, Sons & Co.

THIRSK—Mr. W. Foggitt.

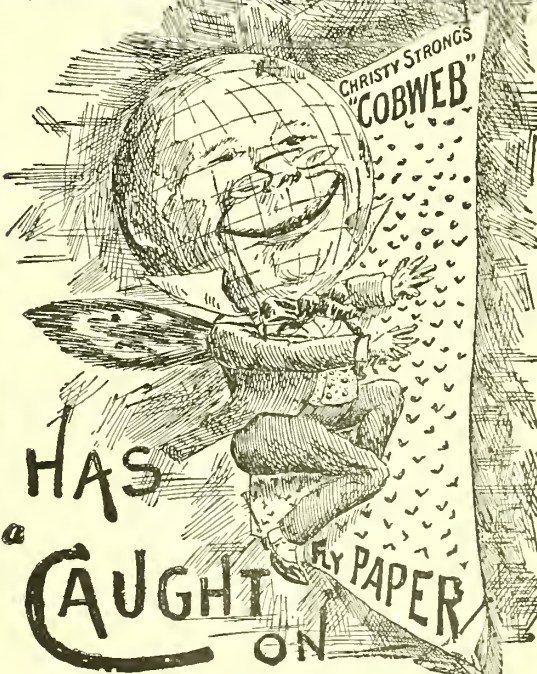
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**JOHN H. SMITH,
NEWARK-ON-TRENT.**

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HAS

CAUGHT

ON

5/- per gross, Carriage Paid Cash must accompany order.

Samples free, CHRISTY STRONG, READING.

A VALUABLE AGENCY!!! BIRD'S BOTANIC ESSENCE

(REGISTERED TRADE MARK).

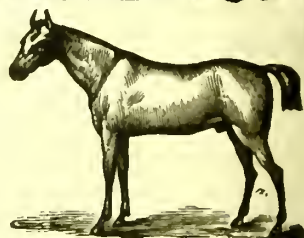
THE CERTAIN CURE

For Curbs, Splints, Spavins, Strains in the Back Sinews, Windgalls, Capped Hocks, Sore Throats, &c., in Horses.

As used in the Stables of the Royal Families, Nobility, the leading Trainers, and largest Horse Owners throughout the World for over 60 years.

Obtains a large sale (and affords a handsome profit) wherever introduced. May be procured of all Wholesale Houses, or direct from Sole Proprietors—

BIRD & STOREY, 42 Castle Street East, Oxford Street, LONDON, W.



GERMOL

NEW AND POWERFUL DISINFECTING FLUID.

(NON-POISONOUS.)

More powerful than Carbolic Acid, and does not stain or burn in use.

"MICROBORT" FOR SURGICAL USE.

GERMOL SANITARY POWDER

GERMOL SHEEP DIP. GERMOL SOAPS.

Samples and Particulars on application to the Sole Manufacturers—

READ HOLLIDAY & SONS, LIMITED,
HUDDERSFIELD, ENGLAND, & NEW YORK, U.S.A.

"ESSETS"
DISINFECTING FLUID.

"ESSETS"
DISINFECTING POWDER.

"ESSETS"
DISINFECTING SOAP AND TOILET PREPARATIONS.

One gallon of "Essets" Fluid is sufficient to make 1,000 gallons of Disinfectant.

Send for Corroborative Reports, Testimonials, Price Lists, and Particulars to—

A. GRANVILLE & CO., 102 High Street, Battersea, S.W.
AGENTS WANTED.

INSURANCE AGAINST THE RAVAGES OF MOTHS.

RUDKIN'S MOTH-BRICKS

(REGISTERED).

When USED ACCORDING TO DIRECTIONS, are thoroughly effective for 3 or 4 years. They have been perfected by many years of experience. They may be sold with confidence. They are attractively put up, and sell at sight if given the chance. They are really the cheapest thing of their kind in the market.

Price 6d. each, or 5/6 a dozen retail.

OF ALL THE LONDON WHOLESALE HOUSES, AND DRANE, CARDIFF.

In 1 and 2 gross boxes, or tin-lined cases for export of 50, 100, and 250 dozen.

CHEMICAL DISINFECTANT.

5, 10, and 15 % CARBOLIC
Antiseptic and Deodorising
Powder.

Bags and Casks free.

AGENTS WANTED
to supply Corporations and large users.

SOLUBLE SANITARY FLUID

In Casks, and in 2, 1, and $\frac{1}{2}$ gallon
Tins.

CHESHIRE BIRD LIME.

In 1d., 2d., 3d., and 6d.
Tins. Also in 1, 2, 3, and
7 lb. Tins & Casks, for large
consumers and the trade.

ENGLISH & FOREIGN
BIRD LIMES
FOR
Fly Paper Makers.

Special Terms in Wholesale quantities.

"COAGULINE"

(TRADE MARK).

Transparent Cement for
Broken Articles.

CUE CEMENT.
CUE-TIP FIXERS
(Brass or Wood).

TIPS, WAFERS, CHALKS.

A NEW WHITE CEMENT,

Inorganic and almost Hydraulic.



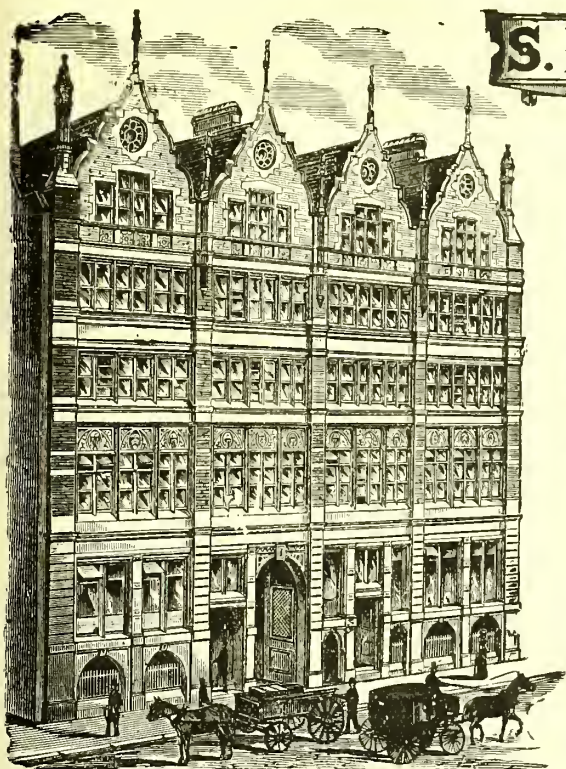
TRADE MARK.

FOR STONE, PORCELAIN,
POTTERY, & ALL VITREOUS
SUBSTANCES.

Requires no preparation.
Easy and clean in application.

KAY BROTHERS LIMITED, Laboratory and Works,
ST. PETERSGATE MILLS, **STOCKPORT.**

Founded A.D. 1786
Incorporated 1887.



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QUARTERLY
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BOOK OF ILLUSTRATIONS
CONTAINING NEARLY

5,000 ENGRAVINGS

OF
SURGEONS' INSTRUMENTS

AND
DRUGGISTS' SUNDRIES

OF ALL KINDS

MAY BE HAD ON APPLICATION ENCLOSED BUSINESS CARD.

Forwarded Post Free to all parts of the World.


S. MAW, SON & THOMPSON

7 to 12 ALDERSGATE STREET, LONDON, E.C.

CORRESPONDENCE INVITED.

GREEN FLINT DISPENSING BOTTLES

Flat, without Edges.

WITH MAW'S TRADE MARK  SUPER.

2	3 & 4	6 & 8	10	12	16	20	ounce.
9/3	10/9	12/-	18/-	18/-	21/6	27/-	per gross.

ORDINARY TINT, SECOND QUALITY,  2.

2	3 & 4	6 & 8	10	12	16	20	ounce.
6/8	8/-	9/6	12/-	13/6	18/9	21/6	per gross.

PRICES in CRATES OF 6 to 8 GROSS. CRATES FREE.

Not less than 1 gross of a size.

WITH MAW'S TRADE MARK  SUPER.

2	3 & 4	6 & 8	10	12	16	20	ounce.
9/-	10/3	11/6	17/6	17/6	21/-	26/-	per gross.

ORDINARY TINT, SECOND QUALITY,  2.

2	3 & 4	6 & 8	10	12	16	20	ounce.
6/6	7/6	9/-	11/3	12/6	17/6	20/-	per gross.

USUAL DISCOUNT. NOT LESS THAN £5 WORTH CARRIAGE PAID.

S. MAW, SON & THOMPSON, 7 to 12 Aldersgate Street, LONDON.



INDIARUBBER HOT WATER BOTTLES, CUSHIONS, BEDS, PILLOWS, &c.

Made of Best "Para" Rubber and guaranteed Durable.

STANDARD DRAB QUALITY—OUR

PATENT "COMFORT" WATER BOTTLES.

RED, BLACK, AND CLOTH COVERED.

All our Bottles are fitted with Currie's Patent Safety Filling Screw, which prevents risk of scalding when filling.

WHOLESALE ONLY. BEST TERMS TO CHEMISTS.

WILLIAM CURRIE & CO., CALEDONIAN RUBBER WORKS, **EDINBURGH.**

London Address—**3 FALCON SQUARE, WOOD STREET, E.C.**



R. H. BARRETT'S PATENT CAPPED BOTTLE

The only REALLY PERFECT Bottle for Vaseline, Pomades, Dry Powders, &c.

PRICES. Tall Series:—

Fitted with **STRONG METAL CAPS, CORK-LINED**; in Various Colours, very attractive in appearance:

1 oz. 11/-; 1½ oz. 11/6; 2 oz. 12/-; 3 oz. 15/-; 4 oz. 16/6 per gross, &c.
Special Prices on application for Quantities.

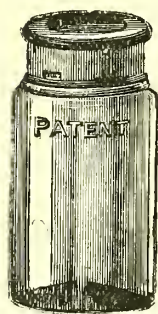
CHEMISTS' AND PERFUMERS' BOTTLES IN GREAT VARIETY, PLAIN OR STOPPERED.

R. H. BARRETT,

FLINT GLASS BOTTLE WORKS.

THE OVAL, CAMBRIDGE HEATH, LONDON, E.

Telegraphic Address—"FOREFRONT LONDON."



H. POTHS & CO., 3 Creechurch Lane, Leadenhall Street, E.C.

SHOP BOTTLES AND JARS WITH VITRIFIED (BURNT IN) LABELS.

METAL SCREW-CAP BOTTLES, GLASS MEASURES, STOPPERED BOTTLES, &c.

Buyers are requested to pay a visit to our *New Showrooms*.

INDIA.

PEAKE, ALLEN & CO.

CHEMISTS, DRUGGISTS,

AND

GENERAL MERCHANTS,

LUCKNOW, OUDH, INDIA,

Possess exceptional facilities for the introduction of **NEW SPECIALITIES**, Patent Medicines, Druggists' Sundries, Perfumery, &c.

DISPENSING BOTTLES.

THE NORTH LONDON GLASS BOTTLE COMPANY

(I. ISAACS & CO., Proprietors)

Beg to inform the Trade that they have made a further reduction in the price of their Bottles, as follows:—

The **NEW SHAPE FLAT BOTTLES**, with rounded edges, plain or graduated—

3 & 4 oz. ..	7/6 per gross.	10 & 12 oz. ..	12/- per gross.
6 " 8 " ..	8/6 " "	16 " " ..	16/- " "
WHITE MOULDED PHIALS, plain or graduated Teaspoons—			
½ oz. ..	3/6 per gross.	1½ oz. ..	4/6 per gross.
" " ..	3/9 " "	2 " " ..	5/- " "

PLEASE NOTE.

Six gross and upwards, assorted or otherwise, are carriage paid to any address in England; smaller quantities not carriage paid.

I. ISAACS & CO., Glass Bottle Manufacturers,
106 MIDLAND ROAD, ST. PANCRAS, LONDON.

Established 60 years.

Bankers—London and Westminster Bank.

DISPENSING BOTTLES.

OLDHAM SHAPE, WITH ROUNDED EDGES.

Perfect Flats, Direct Squares, and Ordinary Flats same price. All Panelled Bottles 1/- per gross extra.



	B	C	D	E	F				
	2	3	4	6	8	10	12	16	20 oz.
Ordinary quality	6/9	7/6	7/6	9/-	9/-	11/6	13/-	17/-	20/- per gross.
Super or quality	7/-	8/-	8/-	9/6	9/6	12/-	13/6	18/-	21/6
Very extra quality	9/-	10/-	10/-	11/-	11/-	15/-	18/-	21/-	24/- "
Quinine tinted	9/9	10/9	10/9	11/9	11/9	16/-	18/6	21/6	26/- "
White Fin t	11/6	12/6	12/6	13/6	13/6	18/-	20/-	24/-	30/- "

A Rebate of 6d. per gross on orders of not less than 10 gross, which can be assorted sizes but not assorted qualities, Carriage paid to any Railway Station or Port in the United Kingdom on orders of not less than 10 gross. Buyers own Name and Address stamped free of charge. Part cost of lettering on first order only, 5/- (except figs. B and F, which are 7 6). When ordering state which quality is required, and, if lettered, which design, and if plain or graduated.

YOUR OWN FEEDERS.

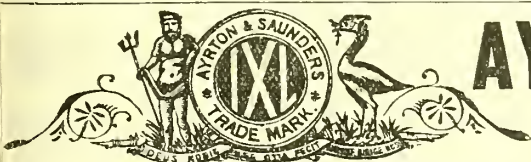


Extra Quality White Flint Feeding Bottle. Guaranteed English Make.

No. 1.	Complete in Box, with quality	"A"	fittings, Black Tubing and Seamless Teat	..	..	..	..	48	per gross.
No. 2.	"	"	"B"	Longer Tubing and Larger Teat	..	..	..	51	"
No. 3.	"	"	"C"	" Superior Teat	..	..	..	54	"
No. 4.	"	"	"D"	Superior Tubing and Teat	..	..	..	57	"
No. 5.	"	"	"E"	A Superior 1/- Line	..	..	..	81	"

When ordering state which design of label is required, and whether with or without Brushes, and in order to prevent error enclose a slip label. Chemists' own Name and Address on the **Box** free of charge for orders of not less than 1 gross. Name and Address or other matter, such as "Use own's Infants' Food," "Robinson's Infants' Cordial," &c., &c., &c., free on the **Bottle** for orders of not less than 2 gross; part cost of lettering the bottle initial order only, 5/-.

If preferred, 1 gross could be forwarded boxed and fitted complete, and the other gross of bottles sent **spare**.
Sample sent post free to any part of the United Kingdom for its value, *plus* 3d. for posting, or any part of the world, *plus* 1/6 for posting.



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BUY THE BEST OIL PUMP

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OIL, TIME, MONEY.
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THOUSANDS IN USE.

This is a representation of our "WILLCOX" New SEMI-ROTARY PATENT PUMP, with Improved Taper Barrel Attachment. It is easy to work and simple in construction, and is admitted to be the best article in the market for Pumping Paraffin Oil and all kinds of Liquid from barrel or tanks into other receptacles.

We hold a Large Stock, and can give Prompt Delivery.

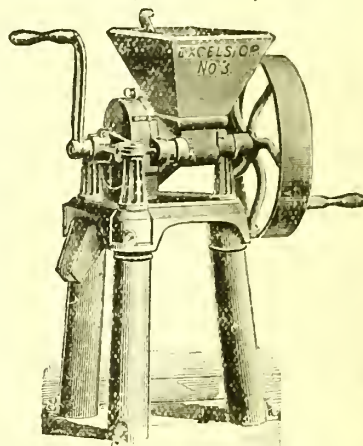
Write for full particulars and prices of The "Willcox New Semi-Rotary" Patent Oil Pumps to

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34 & 36 Southwark Street,
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All Sizes in Stock.

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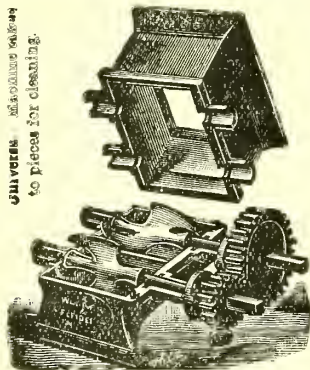
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Size 3. Type 1., for 1-lb. Mass.

THE "UNIVERSAL" Kneading & Mixing Machine,

Used by all the largest Pill Makers

SUITABLE ALSO FOR

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AND MASSES
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PIPERS,
CUTTERS,
ROUNDERS, COATERS
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(WITH INTERCHANGEABLE SIEVES).

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MANUFACTURE THE FOLLOWING SPECIALITIES—

"STIPENDUM" CORK STOPPERS, in all sizes.

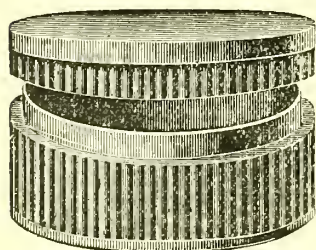
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"STIPENDUM" OPENERS, for Stoppered Aerated-water Bottles

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IN TERRA COTTA, CHOCOLATE, AND BLACK.

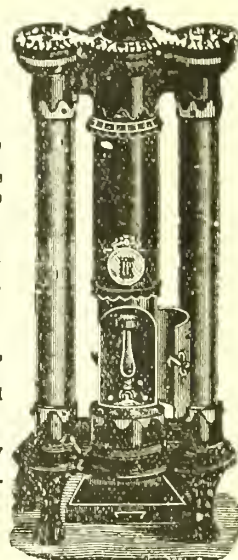
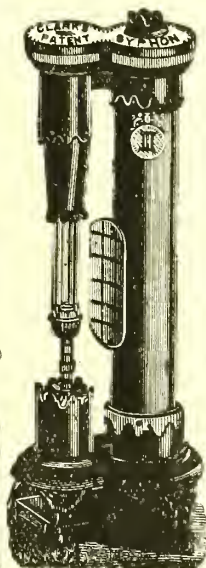
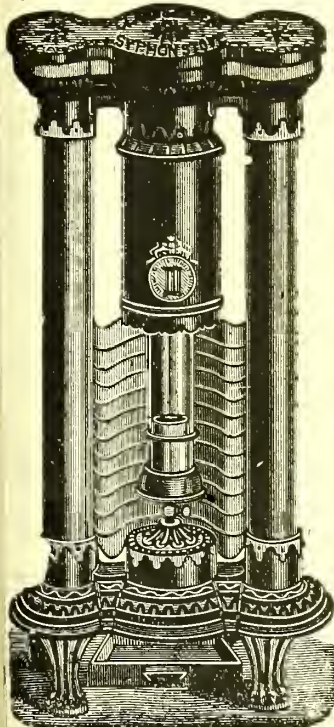
The Grease-Proof Covered Pots have perfectly-fitting lids, are practically unbreakable, and the only articles really answering the purpose intended.
To be had of all Druggists' Sundriesmen.

Wholesale only of the Company.



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"THE SYPHON" (Registered Title)
HYGIENIC CONDENSING GAS HEATING-STOVES
 (CLARK'S PATENT).



A Necessary for all Invalids.
 A Comfort to Everybody.

NO FLUE REQUIRED.
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All injurious vapours are reduced to harmless liquid inside the Stove, and passed out at foot into a tray provided for that purpose.

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The "Syphon" Stove is admirably adapted for heating Chemists' and Druggists Shops and Stores. The heat is evenly diffused, and can be graduated or sustained at pleasure.

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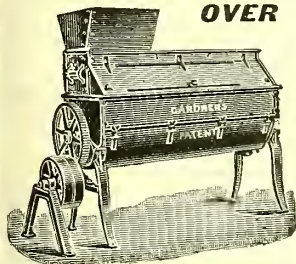
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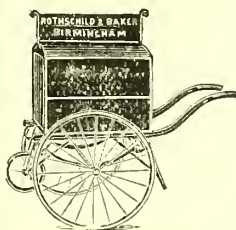
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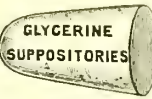
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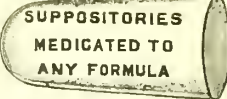
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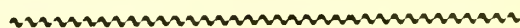
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Howards' Salt, Hand-weighed.

Box of 12 Powders	per dozen	5/3
Band Powders in ½-gross outers	per gross	5/-

(Measured.)

Boxes of 12 Powders	...	...	...	...	per dozen	4 9
Banded Powders in $\frac{1}{3}$ -gross outers	...	...	...	...	per gross	4 6

AND

6d. size	per dozen	3/4
1/- "	"	6/-

Pots with Burnt-in Labels.

Pots with Burnt-in Labels.

6, size	...	...	...	...	...	per dozen	3/4
1, „	...	...	...	...	...	„	6/-

2 oz.	3 oz.	4 oz.	8 oz.
2/10	3/6	4/-	7/-

(In cartons at 6*d.* per dozen extra.)

2d.	bes (in 1-gross outers)	per gross	4/6
3d.	" "	"	7/6
4d.	(in 1-dozen outers)	per dozen	3/6
5d.	" "	"	6/-

1d. boxes (in ¼-gross outers)	per gross	4/-
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For the Hair.

3	4	6	8 oz. bottles.
1/2	2/6	3/6	4/3 per dozen.

Wood-top Corks. In outers of 1 dozen.

Almond, Vanilla, Lemon, Ratafia, Cochineal,
Ginger, Peppermint.

1/2-oz. bottles	...	...	...	...	per dozen	2/6
1-oz. "	...	...	...	...	"	4/4

In showy $\frac{1}{2}$ -pint bottles with Sprinklers.

Per dozen, 6/6.

Carbolic, Rose, Quinine, etc.

12 kinds assorted, in glass-top showcase.

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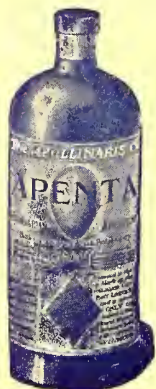
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100 Quarter "	32/6	

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TERMS:—Six Months' Credit from date of Invoice, Net Cash.

The Retail Prices printed on the labels are 1/3 per large bottle, 1/- per small bottle, and 6d. per quarter bottle.

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Cadbury's Cocoa

**ABSOLUTELY PURE
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NO CHEMICALS USED IN CADBURY'S AS IN THE SO-CALLED PURE FOREIGN COCOAS.

"YORKSHIRE RELISH."

CAUTION!

TAKE NOTICE that on the 6th day of July, 1897, the House of Lords (The Lord Chancellor, Lord Watson, Lord Herschell, Lord Shand, and Lord Davey)

UNANIMOUSLY AFFIRMED

the Judgments of Mr. Justice Stirling and the Court of Appeal in the Case of POWELL (trading as **Goodall, Backhouse & Co.**) v. THE BIRMINGHAM VINEGAR BREWERY CO., Limited, and dismissed the Appeal of the Birmingham Vinegar Brewery Co., Limited, from such Judgments with costs in favour of **Goodall, Backhouse & Co.**

Dated this 8th day of July, 1897.

J. SEYMOUR SALAMAN,

65 and 66 CHANCERY LANE, LONDON,

Solicitor for **Messrs. Goodall, Backhouse & Co., Leeds.**